

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

Analyses of Nephrectomies performed between

January 1st and December 31st 2019

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AUDIT RESULTS SUMMARY – Nephrectomy dataset (2019 data)

All the data presented here are a summary of the data extracted from the web-based database on 12th May 2020 and relate to operations performed during the whole of 2019. 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 2019 to 31 December 2019.

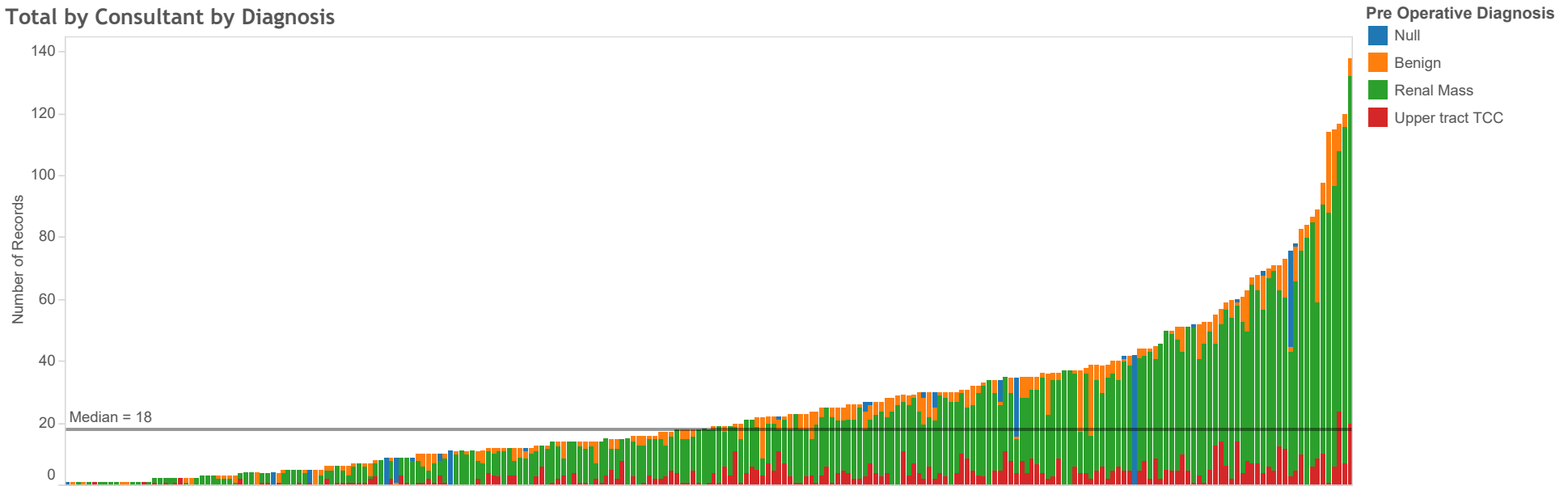
- 6,151 procedures were recorded from 239 consultants at 121 hospital centres in the UK, including 114 private patients from 41 consultants. (England only for 2019 was 5,634)
- Median number of cases per consultant: 18 (range 1 – 138)
- Median number of cases per centre: 37.5 (range 1 - 289)
- 800 cases (13%) were bulk uploaded from other systems with the remaining data being entered on an individual patient basis.
- Hospital Episode Statistics (HES) for 2019 indicate that there were 7,165 nephrectomies undertaken by urologists in 2019. Therefore, we captured data on 79% of the nephrectomies undertaken by urologists in England during 2019.

It is also important to note that as a result of the COVID-19 crisis some surgeons and units may have been unable to submit all or any of their 2019 data.

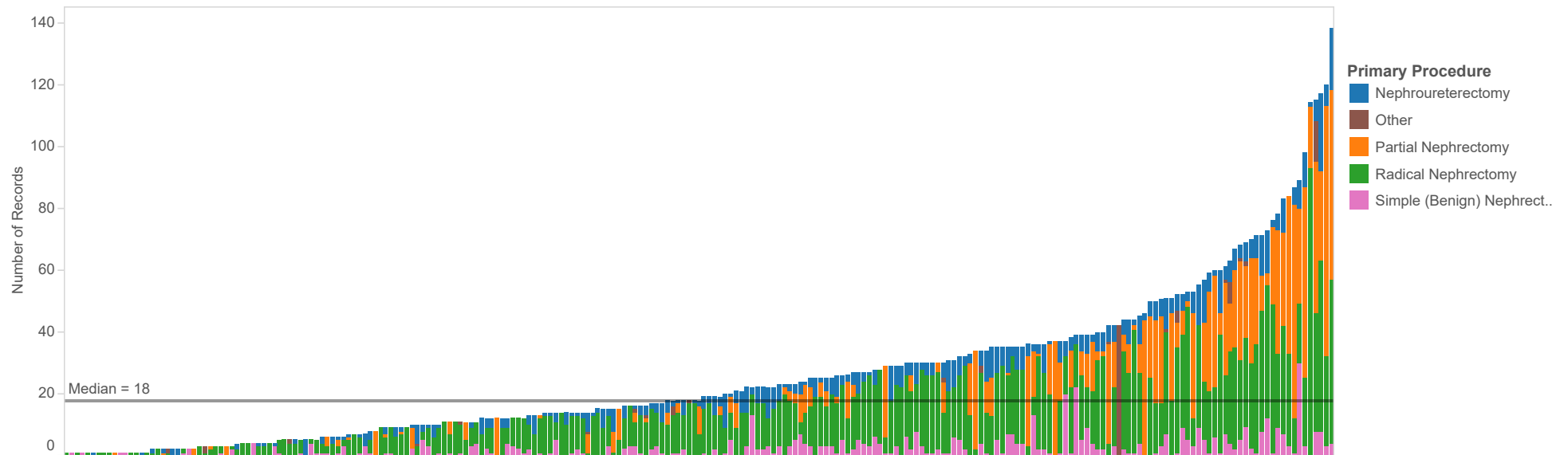
Total Returns for Procedures Performed Between 01/01/2019 and 31/12/2019

6,151 procedures from 239 Consultants from 121 Centres in the UK - including 166 private cases from 41 consultants

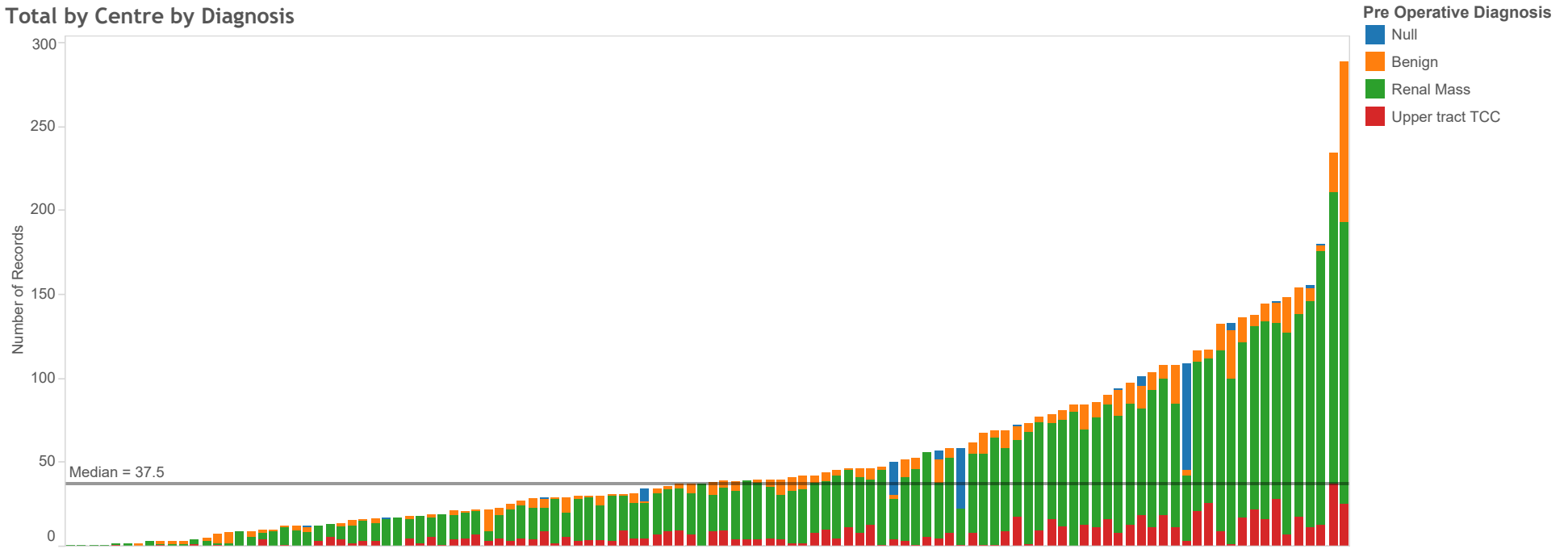
Total by Consultant by Diagnosis



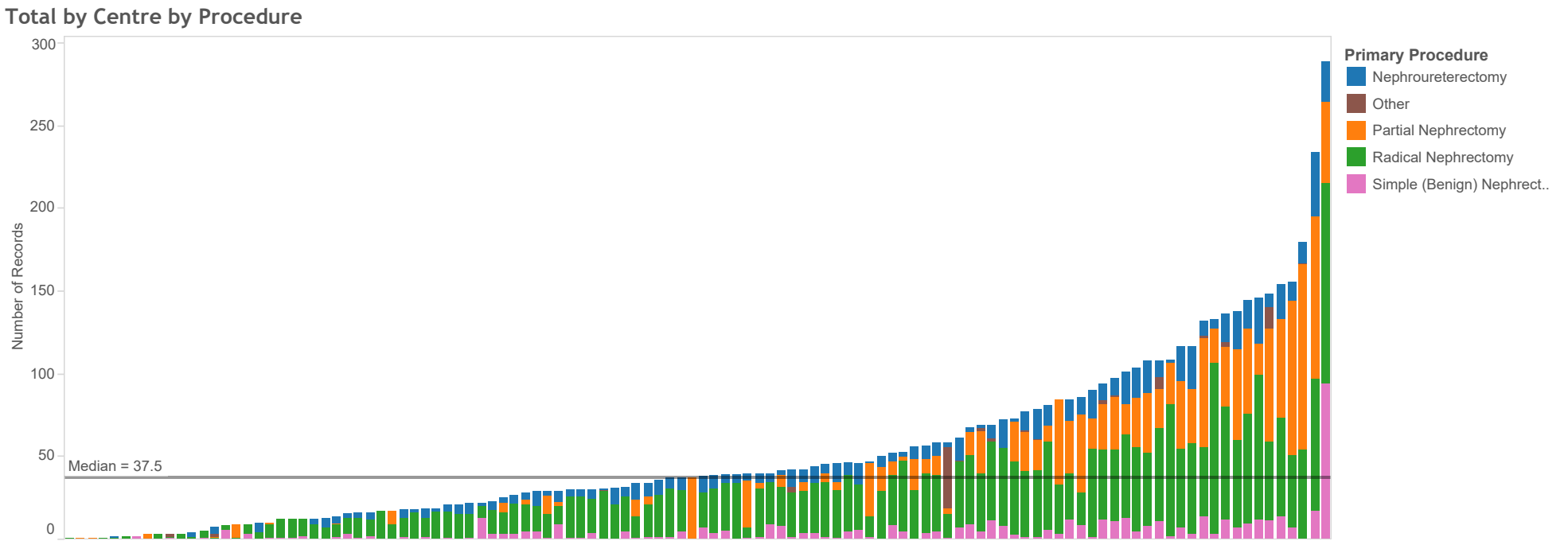
Total by Consultant by Procedure



Total by Centre by Diagnosis



Total by Centre by Procedure



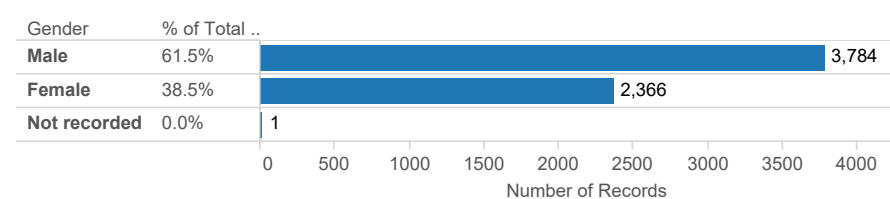
Pre-op Presentation

Pre Op Presentation	Number of Records	% of Total Number of Recor..
Haematuria	1,253	20.4%
Incidental	2,876	46.8%
Other	1,175	19.1%
Not recorded	847	13.8%
Grand Total	6,151	100.0%

Age

Agegroup	% of Total Number of Recor..	Number of Records
41-50	11.77%	670
51-60	23.52%	1,339
61-70	30.79%	1,753
71-80	27.49%	1,565
>80	6.45%	367
Grand Total	100.00%	5,694

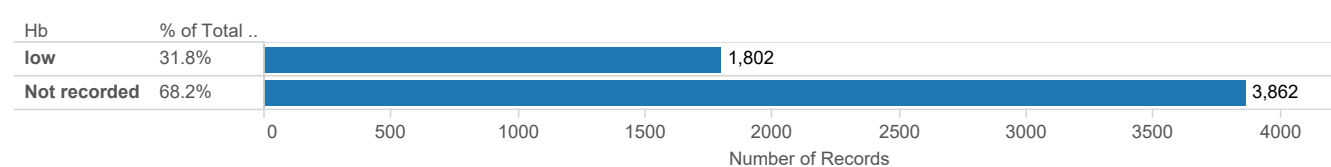
Gender



WHO Performance Status

Who Performance Status	Number of Records	% of Total Number of Recor..
0	3,470	56.41%
1	1,733	28.17%
2	374	6.08%
3	68	1.11%
4	3	0.05%
Not recorded	503	8.18%
Grand Total	6,151	100.00%

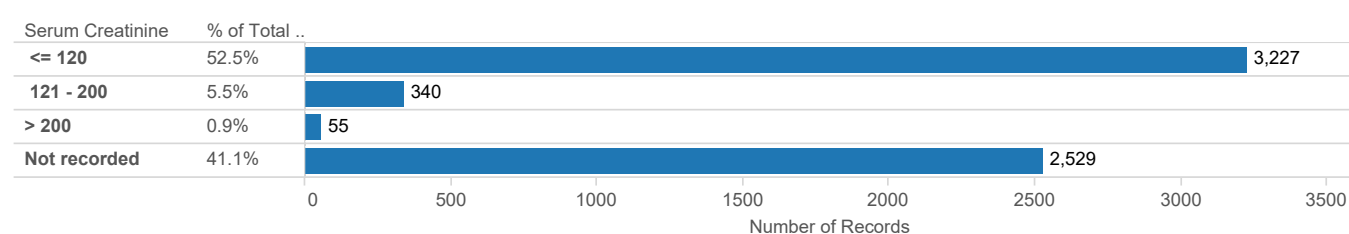
Hb at Operation



eGFR

Egfr Normal	Number of Records	% of Total Number of Recor..
Yes (>60)	3,034	49.33%
No	863	14.03%
Not recorded	2,254	36.64%
Grand Total	6,151	100.00%

Serum Creatinine



Diagnosis

Pre Operative Diagnosis (group)	Number of Records	% of Total Number of Recor..
Benign	694	11.28%
Renal Mass	4,545	73.89%
Upper tract TCC	755	12.27%
Not recorded	157	2.55%
Grand Total	6,151	100.00%

Non-Malignant Diagnosis

Non Malignant Diagnosis	Number of Records	% of Total Number of Recor..
Being performed as a donor	87.0	12.54%
Non-functioning kidney	357.0	51.44%
Polycystic	11.0	1.59%
Pyelonephritis	19.0	2.74%
Stone disease	45.0	6.48%
Xanthogranulomatous pyelonephritis	18.0	2.59%
Oncocytoma	5.0	0.72%
Other	63.0	9.08%
Not recorded	89.0	12.82%
Grand Total	694.0	100.00%

Post-Op Final Histological Diagnosis

PostOp Final Histological Diagnosis	Number of Records	% of Total Number of Recor..
Clear cell renal cell ca	2,886	46.92%
TCC	607	9.87%
Chromophobe	209	3.40%
Papillary	407	6.62%
Other Cancer	116	1.89%
Angiomyolipoma	48	0.78%
Oncocytoma	248	4.03%
Sarcoma	17	0.28%
Other benign	629	10.23%
Not recorded	984	16.00%
Grand Total	6,151	100.00%

Tstage

Tstage (group)	Number of Records	% of Total Number of Recor..
1	2,682	49.15%
2	578	10.59%
3	1,537	28.17%
4	74	1.36%
a	256	4.69%
is	6	0.11%
Not recorded / Unknown	324	5.94%
Grand Total	5,457	100.00%

Nstage

Nstage (group)	Number of Records	% of Total Number of Recor..
0	4,261	78.08%
1	174	3.19%
2	35	0.64%
Not recorded / Unknown	987	18.09%
Grand Total	5,457	100.00%

Mstage

Mstage (group)	Number of Records	% of Total Number of Recor..
0	3,287	60.23%
1	196	3.59%
Not recorded / Unknown	1,974	36.17%
Grand Total	5,457	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	80.4%	4,944
SpR	5.1%	313
Other	2.9%	177
Not recorded	11.7%	717
Grand Total		6,151

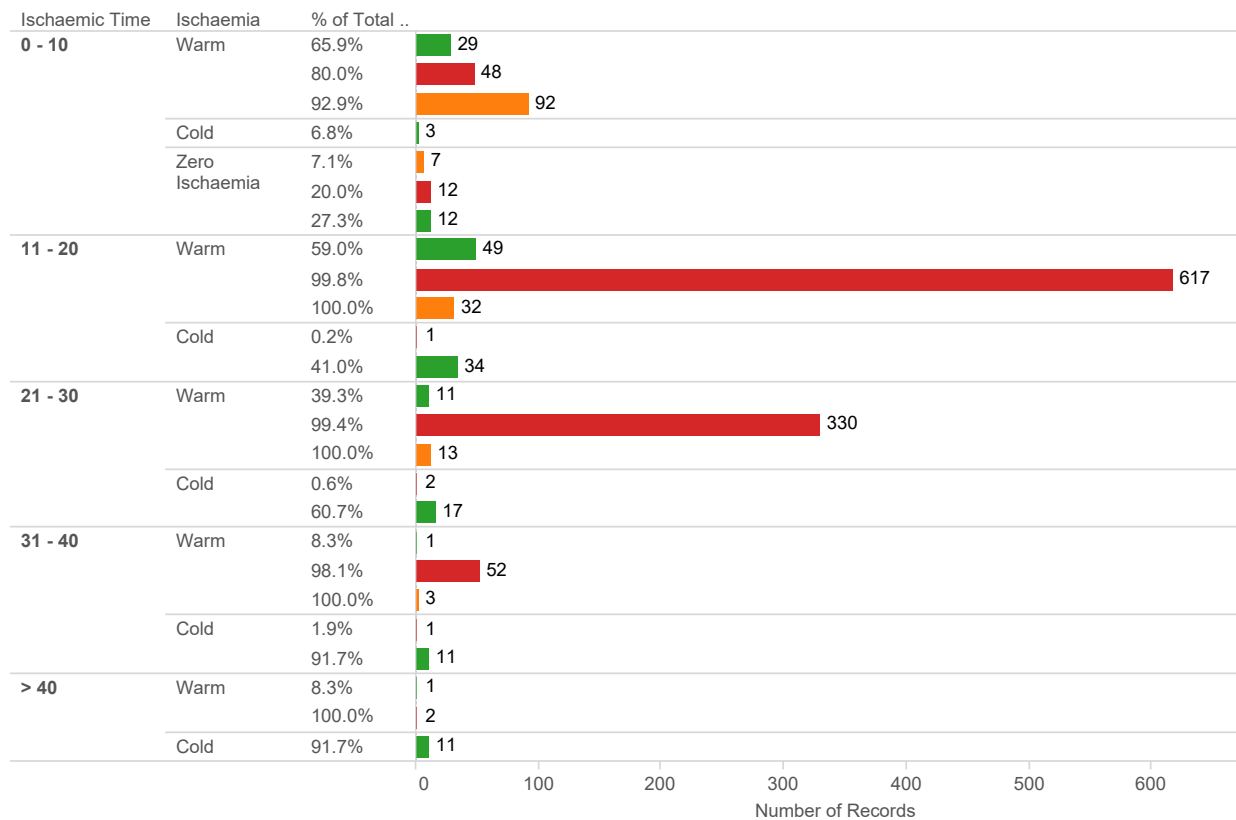
Procedure by Technique

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..	591	18.88%	2,296	73.35%	136	4.35%	107	3.42%	3,130	100.00%
Partial Nephr..	218	13.96%	148	9.48%	1,184	75.80%	12	0.77%	1,562	100.00%
Nephrourete..	48	5.86%	641	78.27%	111	13.55%	19	2.32%	819	100.00%
Simple (Beni..	65	11.78%	472	85.51%	6	1.09%	9	1.63%	552	100.00%
Other	20	22.73%	17	19.32%	7	7.95%	44	50.00%	88	100.00%
Grand Total	942	15.31%	3,574	58.10%	1,444	23.48%	191	3.11%	6,151	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	37	50.68%	3	4.11%	33	45.21%			73	100.00%
Elective	128	11.73%	64	5.87%	899	82.40%			1,091	100.00%
Relative	24	17.91%	2	1.49%	108	80.60%			134	100.00%
Not recorded	29	10.98%	79	29.92%	144	54.55%	12	4.55%	264	100.00%
Grand Total	218	13.96%	148	9.48%	1,184	75.80%	12	0.77%	1,562	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	28	21.05%	90	67.67%	12	9.02%	2	1.50%	1	0.75%	133	100.00%
	Laparoscopic	378	55.26%	65	9.50%	239	34.94%	2	0.29%			684	100.00%
	Robotic	23	3.33%	629	91.03%	39	5.64%					691	100.00%
>4 - 7	Open	51	45.95%	52	46.85%	7	6.31%	1	0.90%			111	100.00%
	Laparoscopic	741	87.69%	10	1.18%	93	11.01%	1	0.12%			845	100.00%
	Robotic	43	22.28%	144	74.61%	6	3.11%					193	100.00%
>7 - 10	Open	152	95.00%	5	3.13%	1	0.63%	2	1.25%			160	100.00%
	Laparoscopic	370	96.10%	1	0.26%	14	3.64%					385	100.00%
	Robotic	18	66.67%	8	29.63%	1	3.70%					27	100.00%
>10	Open	230	92.00%	8	3.20%	9	3.60%	3	1.20%			250	100.00%
	Laparoscopic	212	84.80%	3	1.20%	34	13.60%	1	0.40%			250	100.00%
	Robotic	11	8.87%	97	78.23%	16	12.90%					124	100.00%
Not Recorded	Open	130	45.14%	63	21.88%	19	6.60%	12	4.17%	64	22.22%	288	100.00%
	Not recorded	107	56.02%	12	6.28%	19	9.95%	44	23.04%	9	4.71%	191	100.00%
	Laparoscopic	595	42.20%	69	4.89%	261	18.51%	13	0.92%	472	33.48%	1,410	100.00%
	Robotic	41	10.02%	306	74.82%	49	11.98%	7	1.71%	6	1.47%	409	100.00%
Grand Total		3,130	50.89%	1,562	25.39%	819	13.31%	88	1.43%	552	8.97%	6,151	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	3	18.75%	8	50.00%					5	31.25%	16	100.00%
	Laparoscopic	109	72.19%	13	8.61%	5	3.31%			24	15.89%	151	100.00%
	Robotic	1	3.13%	31	96.88%							32	100.00%
1 - 2 hours	Open	99	60.00%	45	27.27%	2	1.21%	2	1.21%	17	10.30%	165	100.00%
	Laparoscopic	662	74.97%	29	3.28%	47	5.32%	2	0.23%	143	16.19%	883	100.00%
	Robotic	17	5.40%	285	90.48%	10	3.17%	3	0.95%			315	100.00%
> 2 - 3 hours	Open	185	59.87%	85	27.51%	16	5.18%	2	0.65%	21	6.80%	309	100.00%
	Laparoscopic	771	68.29%	33	2.92%	186	16.47%	8	0.71%	131	11.60%	1,129	100.00%
	Robotic	42	7.45%	482	85.46%	36	6.38%	3	0.53%	1	0.18%	564	100.00%
> 3 - 4 hours	Open	105	69.08%	29	19.08%	10	6.58%	1	0.66%	7	4.61%	152	100.00%
	Laparoscopic	264	51.87%	24	4.72%	180	35.36%	1	0.20%	40	7.86%	509	100.00%
	Robotic	31	14.62%	158	74.53%	20	9.43%	1	0.47%	2	0.94%	212	100.00%
> 4 - 6 hours	Open	66	68.04%	20	20.62%	7	7.22%	2	2.06%	2	2.06%	97	100.00%
	Laparoscopic	85	42.71%	8	4.02%	93	46.73%	1	0.50%	12	6.03%	199	100.00%
	Robotic	18	28.13%	33	51.56%	12	18.75%			1	1.56%	64	100.00%
> 6 hours	Open	21	67.74%	4	12.90%	3	9.68%	3	9.68%			31	100.00%
	Laparoscopic	7	25.00%			17	60.71%			4	14.29%	28	100.00%
	Robotic			4	57.14%	3	42.86%					7	100.00%
Grand Total		2,486	51.12%	1,291	26.55%	647	13.30%	29	0.60%	410	8.43%	4,863	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	280	55.01%	154	30.26%	25	4.91%	7	1.38%	43	8.45%	509	100.00%
	Laparoscopic	1,793	64.80%	74	2.67%	494	17.85%	14	0.51%	392	14.17%	2,767	100.00%
	Robotic	110	9.27%	984	82.90%	82	6.91%	7	0.59%	4	0.34%	1,187	100.00%
> 500 - 1000	Open	112	74.17%	25	16.56%	7	4.64%	1	0.66%	6	3.97%	151	100.00%
	Laparoscopic	65	70.65%	6	6.52%	16	17.39%	1	1.09%	4	4.35%	92	100.00%
	Robotic	3	6.00%	45	90.00%	2	4.00%					50	100.00%
> 1000 - 2000	Open	73	75.26%	12	12.37%	6	6.19%	2	2.06%	4	4.12%	97	100.00%
	Laparoscopic	21	77.78%	2	7.41%	2	7.41%			2	7.41%	27	100.00%
	Robotic	1	7.69%	11	84.62%	1	7.69%					13	100.00%
> 2000 - 5000	Open	39	82.98%	6	12.77%	1	2.13%	1	2.13%			47	100.00%
	Laparoscopic	14	66.67%	1	4.76%	4	19.05%			2	9.52%	21	100.00%
	Robotic			1	100.00%							1	100.00%
> 5000	Open	8	88.89%	1	11.11%							9	100.00%
	Laparoscopic	4	100.00%									4	100.00%
Grand Total		2,523	50.71%	1,322	26.57%	640	12.86%	33	0.66%	457	9.19%	4,975	100.00%

Transfusion Rate

Blood Transfused	Number of Records	% of Total Number of Recor..
Not transfused	5,375	95.47%
Transfused	255	4.53%
Grand Total	5,630	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	107	74.83%	16	11.19%	9	6.29%	3	2.10%	8	5.59%	143	100.00%
	Laparoscopic	65	66.33%	2	2.04%	23	23.47%	1	1.02%	7	7.14%	98	100.00%
	Robotic	2	14.29%	10	71.43%	2	14.29%					14	100.00%
Not transfused	Open	453	59.68%	196	25.82%	37	4.87%	16	2.11%	57	7.51%	759	100.00%
	Laparoscopic	2,086	64.74%	85	2.64%	579	17.97%	16	0.50%	456	14.15%	3,222	100.00%
	Robotic	130	9.33%	1,145	82.20%	105	7.54%	7	0.50%	6	0.43%	1,393	100.00%
	Not recorded			1	100.00%							1	100.00%
Grand Total		2,843	50.50%	1,455	25.84%	755	13.41%	43	0.76%	534	9.48%	5,630	100.00%

Clavien Dindo Grade III plus Complication Rate

Grade3Plus (group) (copy)	Number of Records	% of Total Number of Recor..
Grade III plus	135	2.48%
No	5,314	97.52%
Grand Total	5,449	100.00%

Mortality rate (30 day)

30 Day mortality	Number of Records	% of Total Number of Recor..
No	6,129	99.64%
Yes	22	0.36%
Grand Total	6,151	100.00%

Clavien Dindo Grades by procedure & Technique

Clavien Dindo Grade Of Complicatio..	Primary Procedure	Technique (group)				Grand Total			
		Open Number of Records	% of Total Number of Records ..	Laparoscopic Number of Records	% of Total Number of Records ..	Robotic Number of Records	% of Total Number of Records ..	Number of Records	% of Total Number of Records ..
Grade IIIa	Radical Nephrectomy	4	33.33%	7	58.33%	1	8.33%	12	100.00%
	Partial Nephrectomy	5	33.33%	2	13.33%	8	53.33%	15	100.00%
	Nephroureterectomy	1	11.11%	8	88.89%			9	100.00%
	Simple (Benign) Nephrectomy	2	28.57%	5	71.43%			7	100.00%
	Total	12	27.91%	22	51.16%	9	20.93%	43	100.00%
Grade IIIb	Radical Nephrectomy	2	15.38%	10	76.92%	1	7.69%	13	100.00%
	Partial Nephrectomy	8	44.44%	2	11.11%	8	44.44%	18	100.00%
	Nephroureterectomy			9	81.82%	2	18.18%	11	100.00%
	Other			1	100.00%			1	100.00%
	Simple (Benign) Nephrectomy	4	50.00%	4	50.00%			8	100.00%
	Total	14	27.45%	26	50.98%	11	21.57%	51	100.00%
Grade IVa	Radical Nephrectomy	5	50.00%	5	50.00%			10	100.00%
	Partial Nephrectomy	3	60.00%			2	40.00%	5	100.00%
	Nephroureterectomy	1	16.67%	5	83.33%			6	100.00%
	Simple (Benign) Nephrectomy			1	100.00%			1	100.00%
	Total	9	40.91%	11	50.00%	2	9.09%	22	100.00%
Grade IVb	Radical Nephrectomy	1	50.00%	1	50.00%			2	100.00%
	Simple (Benign) Nephrectomy			1	100.00%			1	100.00%
	Total	1	33.33%	2	66.67%			3	100.00%
Grade V	Radical Nephrectomy	7	63.64%	4	36.36%			11	100.00%
	Nephroureterectomy			3	100.00%			3	100.00%
	Simple (Benign) Nephrectomy	2	100.00%					2	100.00%
	Total	9	56.25%	7	43.75%			16	100.00%
Grand Total		45	33.33%	68	50.37%	22	16.30%	135	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	3	0.16%	2	2.53%					2	0.49%	7	0.24%
	Difficult dissection	19	1.01%	2	2.53%	5	1.01%			7	1.72%	33	1.15%
	Failure to progress	10	0.53%			2	0.40%			1	0.25%	13	0.45%
	Haemorrhage	22	1.17%	1	1.27%	3	0.61%	1	7.69%			27	0.94%
	Patient obesity	1	0.05%									1	0.03%
	Size of tumour / mass	10	0.53%	1	1.27%	1	0.20%			1	0.25%	13	0.45%
	Other	4	0.21%	1	1.27%							5	0.17%
	Not recorded/Applicable	2	0.11%	2	2.53%							4	0.14%
	Total	71	3.78%	9	11.39%	11	2.22%	1	7.69%	11	2.70%	103	3.58%
No	Not recorded/Applicable	1,809	96.22%	70	88.61%	484	97.78%	12	92.31%	397	97.30%	2,772	96.42%
	Total	1,809	96.22%	70	88.61%	484	97.78%	12	92.31%	397	97.30%	2,772	96.42%
Grand Total		1,880	100.00%	79	100.00%	495	100.00%	13	100.00%	408	100.00%	2,875	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..	58	43.28%	69	51.49%	7	5.22%	134	100.00%
	Partial Neph..	24	40.00%	5	8.33%	31	51.67%	60	100.00%
	Nephroureter..	1	5.00%	17	85.00%	2	10.00%	20	100.00%
	Simple (Benig..	1	11.11%	8	88.89%			9	100.00%
	Total	84	37.67%	99	44.39%	40	17.94%	223	100.00%
No	Radical Neph..	449	18.53%	1,858	76.68%	116	4.79%	2,423	100.00%
	Partial Neph..	179	13.58%	77	5.84%	1,062	80.58%	1,318	100.00%
	Nephroureter..	40	6.19%	511	79.10%	95	14.71%	646	100.00%
	Simple (Benig..	55	11.68%	412	87.47%	4	0.85%	471	100.00%
	Total	723	14.88%	2,858	58.83%	1,277	26.29%	4,858	100.00%
Not recorded	Radical Neph..	84	14.66%	369	64.40%	13	2.27%	573	100.00%
	Partial Neph..	15	8.15%	66	35.87%	91	49.46%	184	100.00%
	Nephroureter..	7	4.58%	113	73.86%	14	9.15%	153	100.00%
	Simple (Benig..	9	12.50%	52	72.22%	2	2.78%	72	100.00%
	Total	115	11.71%	600	61.10%	120	12.22%	982	100.00%
Grand Total		922	15.21%	3,557	58.67%	1,437	23.70%	6,063	100.00%

Specific Intra-operative Complications

Primary Procedure	Specific Intraoperative Com..	Technique (group)			
		Open	Laparos..	Robotic	Grand T..
Radical Nephrectomy	Bleeding	30	41	2	73
	Bleeding,Bowel injury		1		1
	Bleeding,Liver injury	1			1
	Bleeding,Other	2	2		4
	Bleeding,Splenectomy	3			3
	Bowel injury	3	2		5
	Liver injury		3		3
	Pneumothorax	1	2		3
	Splenectomy	8	1		9
	Other	9	14	5	28
	Not recorded	1	3		4
Partial Nephrectomy	Bleeding	15	1	14	30
	Bleeding,Other			1	1
	Bowel injury			1	1
	Liver injury			1	1
	Pneumothorax	4		3	7
	Splenectomy	1			1
	Splenectomy,Other	1			1
	Other	3	1	11	15
	Not recorded		3		3
	Nephroureterectomy	Bleeding	1	5	1
Bleeding,Other			2		2
Bleeding,Pneumothorax,Other			1		1
Bowel injury			2		2
Other			5	1	6
Not recorded			2		2
Simple (Benign) Nephrectomy	Bleeding		5		5
	Bleeding,Other		1		1
	Bowel injury	1	1		2
	Other		1		1
Grand Total		84	99	40	223

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..	89	30.58%	195	67.01%	7	2.41%	291	100.00%
	Partial Neph..	45	25.42%	18	10.17%	114	64.41%	177	100.00%
	Nephrouret..	9	8.26%	89	81.65%	11	10.09%	109	100.00%
	Simple (Ben..	15	23.81%	47	74.60%	1	1.59%	63	100.00%
No	Radical Neph..	464	18.67%	1,900	76.46%	121	4.87%	2,485	100.00%
	Partial Neph..	157	12.71%	71	5.75%	1,006	81.46%	1,235	100.00%
	Nephrouret..	36	5.85%	490	79.67%	89	14.47%	615	100.00%
	Simple (Ben..	49	10.68%	405	88.24%	5	1.09%	459	100.00%
Not recorded	Radical Neph..	38	10.73%	201	56.78%	8	2.26%	354	100.00%
	Partial Neph..	16	10.67%	59	39.33%	64	42.67%	150	100.00%
	Nephrouret..	3	3.16%	62	65.26%	11	11.58%	95	100.00%
	Simple (Ben..	1	3.33%	20	66.67%			30	100.00%
Grand Total		922	15.21%	3,557	58.67%	1,437	23.70%	6,063	100.00%

Specific Post-operative Complications

Primary Procedure	Specific Postoperative Complic..	Technique (group)				
		Open	Laparosc..	Robotic	Grand Tot..	
Radical Nephrectomy	Bleeding / haemorrhage +/- Others	4	16	1	21	
	Chest infection +/- Others	22	53	2	77	
	Ileus +/- others	15	24	1	40	
	Renal failure +/- others	7	1		8	
	DVT / PE +/- others	2	4		6	
	Problematic pain control +/- others	1	11	1	13	
	Wound infection +/- others	7	20		27	
	Other	28	58	2	88	
	Not recorded	3	8		11	
	Partial Nephrectomy	Bleeding / haemorrhage +/- Others		3	18	21
		Chest infection +/- Others	13	1	31	45
Ileus +/- others		2	1	5	8	
Renal failure +/- others		4		3	7	
DVT / PE +/- others		1			1	
Problematic pain control +/- others		1	2	7	10	
Wound infection +/- others		11	2	4	17	
Other		13	4	45	62	
Not recorded			5	1	6	
Nephroureterectomy		Bleeding / haemorrhage +/- Others		13	3	16
		Chest infection +/- Others	1	21	2	24
	Ileus +/- others	1	10	2	13	
	Renal failure +/- others	1	2		3	
	Problematic pain control +/- others	1	3		4	
	Wound infection +/- others	2	6		8	
	Other	3	33	3	39	
	Not recorded		1	1	2	
Simple (Benign) Nephrectomy	Bleeding / haemorrhage +/- Others	3	3		6	
	Chest infection +/- Others	3	8		11	
	Ileus +/- others	2	3		5	
	Problematic pain control +/- others	1	13	1	15	
	Wound infection +/- others	3	6		9	
	Other	3	14		17	
Grand Total		158	349	133	640	

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	581	10.09%	6	0	47
	Partial Nephrectomy	205	3.56%	5	0	35
	Nephroureterectomy	46	0.80%	7	1	30
	Simple (Benign) Nephrectomy	65	1.13%	7	1	33
	Other	20	0.35%	7	3	34
	Total		917	15.92%	6	0
Laparoscopic	Radical Nephrectomy	2,222	38.57%	3	0	79
	Partial Nephrectomy	144	2.50%	2	1	19
	Nephroureterectomy	620	10.76%	4	0	77
	Simple (Benign) Nephrectomy	457	7.93%	2	0	67
	Other	17	0.30%	2	0	15
	Total		3,460	60.06%	3	0
Robotic	Radical Nephrectomy	129	2.24%	3	0	17
	Partial Nephrectomy	1,139	19.77%	2	0	27
	Nephroureterectomy	102	1.77%	3	1	23
	Simple (Benign) Nephrectomy	6	0.10%	4	2	7
	Other	7	0.12%	2	1	4
	Total		1,383	24.01%	2	0
Not recorded	Partial Nephrectomy	1	0.02%	2	2	2
	Total		1	0.02%	2	2
Grand Total		5,761	100.00%	3	0	79

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	1	0.63%	81	51.27%	76	48.10%	158	100.00%
G2	21	1.93%	417	38.33%	650	59.74%	1,088	100.00%
G3	29	2.79%	294	28.24%	718	68.97%	1,041	100.00%
G4	3	0.75%	46	11.53%	350	87.72%	399	100.00%
Not recorded	23	4.38%	234	44.57%	268	51.05%	525	100.00%
Grand Total	77	2.40%	1,072	33.39%	2,062	64.22%	3,211	100.00%

Grade of Urothelial Tumours

Urothelial Tumour Grade	Number of Records	% of Total Number of Recor..
G1	21.0	3.46%
G2	217.0	35.75%
G3	299.0	49.26%
Not recorded	70.0	11.53%
Grand Total	607.0	100.00%

Follow-Up

Adjuvant management

Fuadjuvantmanagement	Number of Records	% of Total Number of Recor..
None	11	1.11%
Immunotherapy	1	0.10%
Observation	13	1.31%
Other	1	0.10%
Not recorded	967	97.38%
Grand Total	993	100.00%

Late Complications

Fulatecomplicati..	Number of Records	% of Total Number of Recor..
None	519.0	71.78%
Renal impairment	3.0	0.41%
Wound	3.0	0.41%
Wound hernia	2.0	0.28%
Wound pain	6.0	0.83%
DVT	1.0	0.14%
Other	23.0	3.18%
Not recorded	166.0	22.96%
Grand Total	723.0	100.00%

Status at most recent follow-up

Fustatus	Fupatientstatus	Time to Follow -up						Grand Total	
		<= 6 months		> 6 months		Not recorded		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	342.0	62.30%	85.0	50.00%	2.0	50.00%	429.0	59.34%
Alive with local recurrence of renal cancer	Alive	4.0	0.73%	1.0	0.59%			5.0	0.69%
Alive with lymph node involvement by renal cancer	Alive	1.0	0.18%	1.0	0.59%			2.0	0.28%
Alive with metastatic disease	Alive	30.0	5.46%	16.0	9.41%			46.0	6.36%
Discharged to GP / Other consultant	Alive	58.0	10.56%	8.0	4.71%	1.0	25.00%	67.0	9.27%
Not recorded	Alive	99.0	18.03%	54.0	31.76%	1.0	25.00%	154.0	21.30%
	Died in followup	15.0	2.73%	4.0	2.35%			19.0	2.63%
	Not recorded			1.0	0.59%			1.0	0.14%
Grand Total		549.0	100.00%	170.0	100.00%	4.0	100.00%	723.0	100.00%

Participating Hospital Centres 2019

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

Aberdeen Royal Infirmary	Derriford Hospital, Plymouth	Lincoln County Hospital
Addenbrooke's Hospital, Cambridge	Diana, Princess of Wales Hospital, Grimsby	Lister Hospital, Stevenage
Aintree University Hospital, Liverpool	Doncaster Royal Infirmary	Luton & Dunstable University Hospital
Airedale Hospital	Dorset County Hospital, Dorchester	Maidstone Hospital
Alexandra Hospital, Redditch	East Surrey Hospital, Redhill	Manchester Royal Infirmary
Arrowe Park Hospital, Wirral	Eastbourne District General Hospital	Medway Maritime Hospital, Gillingham
Barking, Havering & Redbridge University Hospital	Epsom General Hospital, Surrey	Milton Keynes Hospital
Basildon University Hospital, Essex	Forth Valley Royal Hospital, Larbert	Monklands District General Hospital, Airdrie
Basingstoke and North Hampshire Hospital	Freeman Hospital, Newcastle	Morrison Hospital, Swansea
Bedford Hospital	Frimley Park Hospital	Musgrove Park Hospital, Taunton
Blackpool Victoria Hospital	George Eliot Hospital, Nuneaton	New Cross Hospital, Wolverhampton
Bradford Royal Infirmary	Glasgow Royal Infirmary	Ninewells Hospital, Dundee
Broomfield Hospital, Chelmsford	Guy's & Thomas's Hospital	Norfolk & Norwich University Hospital
Castle Hill Hospital, Hull	Halton General Hospital, Runcorn	North Hampshire Hospital, Basingstoke
Charing Cross Hospital, London	Heartlands Hospital, Birmingham	North Manchester General Hospital
Chelsea & Westminster Hospital, London	Hereford County Hospital	North Middlesex Hospital, London
Cheltenham General Hospital	Huddersfield Royal Infirmary	Northampton General Hospital
Chesterfield Royal Hospital	Ipswich Hospital, Suffolk	Northwick Park Hospital
Christie Hospital	James Cook University Hospital, Middlesbrough	Nottingham City Hospital
Churchill Hospital, Oxford	Kent & Canterbury Hospital	Pinderfields General Hospital, Wakefield
City Hospital Birmingham	Kettering General Hospital	Princess Alexandra Hospital, Harlow
Colchester General Hospital	King's College Hospital, London	Princess Elizabeth Hospital, Guernsey
Countess of Chester Hospital	King's Mill Hospital, Nottinghamshire	Princess Royal Hospital, Haywards Heath
Cumberland Infirmary, Carlisle	Kingston Hospital, London	Queen Alexandra Hospital, Portsmouth
Darent Valley Hospital, Kent	Leicester General Hospital	Queen Elizabeth Hospital, Birmingham

Queen Elizabeth University Hospital
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 Glamorgan Hospital
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
Royal United Hospital, Bath

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
Watford General Hospital
West Suffolk Hospital, Bury St Edmunds
Western General Hospital, Edinburgh
Whiston Hospital, Prescot
Withington Community Hospital, Manchester
Worthing Hospital
Wrexham Maelor Hospital
Wycombe Hospital, High Wycombe
Wythenshawe Hospital, Manchester
York Hospital