

**THE BRITISH ASSOCIATION OF  
UROLOGICAL SURGEONS**

**SECTION of ONCOLOGY**

**BAUS Cancer Registry  
Analyses of Complex Operations  
January 1<sup>st</sup> – 31<sup>st</sup> December 2009**

**May 2010**

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**PRODUCED FOR BAUS SECTION OF ONCOLOGY**

**by**

**Mrs Sarah Fowler  
BAUS Cancer Registry & Audits Manager**

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## Introduction

The 2009 analysis of the complex urological operation database is the first extracted from the web-based database developed by Nuvola. This has been the first opportunity to interrogate the database to any significant degree and has not been without its problems. As in previous years, data collection appears to be rather erratic, with the number of cystectomies and nephrectomies reported declining, while the number of radical prostatectomies increased by almost 60%.

The BAUS Registry is still not showing convincing evidence that centralisation of complex pelvic cancers is working effectively. The number of cystectomies per consultant per centre appears to be declining, although on the prostatectomy front the trend is encouragingly upward. Whether this is a true reflection of the situation nationally is unclear, and further comprehensive data is being gathered which we hope to share and discuss at our section meeting in London in the autumn.

Certain trends noted over the last few years appear to continue. These show bladder cancer patients still being offered low rates of continent urinary diversion, although there is a slight upward trend. Extended pelvic lymph node dissection continues to rise, albeit slowly. On the prostate cancer front, the number of cases detected by screening and case finding continues to rise, with the number of T1c cancers now approaching 50%. Laparoscopic radical prostatectomy continues to rise from 36% in 2008 to almost 60%, while about 10% of cases of RP were performed with robotic assistance. One would expect this figure to rise significantly over the next few years. The nephrectomy database has also confirmed an increasing proportion of procedures carried out laparoscopically. In addition to this the proportion of T3 and T4 renal cancers coming to surgery appears to have risen significantly. Whether this is due to the availability of effective adjuvant therapy is unclear but remains an interesting trend to be watched. Lastly the number of patients having accurate follow up data recorded remains disappointingly low, and members of the executive committee are meeting regularly with the *South West Cancer Intelligence Service* (SWCIS) and the NCIN to look at ways of sharing information, particularly outcome data.

As always Sarah Fowler and the Nuvola team deserve heaps of praise for coping with an extremely busy year getting the system on line and all the users up to speed.

Greg Boustead  
May 2010

## **Audit Results Summary**

### **BAUS Complex Operations Datasets – January 1<sup>st</sup> – December 31<sup>st</sup> 2009**

- **519 cystectomies reported by 77 consultants from 57 centres**
- **76% males (388/511 recorded)**
- **1757 prostatectomies reported by 92 consultants from 68 centres**
- **1482 nephrectomies reported by 138 consultants from 83 centres**
- **63% males (911/1440 recorded)**

Private patients accounted for 0.2% (1/519) of the cystectomies; 1.7% (30/1757) of the radical prostatectomies and 0.3% (4/1482) of the nephrectomies.

#### **How were the data analysed?**

All information presented here was extracted from the web-based database developed by Nuvola and launched in June 2009. All historical information was uploaded to the system at this time and participants were then encouraged to start entering their data directly, either in the form of bulk uploads or on an individual patient basis. As would be expected there have been a number of teething problems both with the bulk uploading and with individual data entry as users become used to the new system.

Until January 1<sup>st</sup> 2010 data could be returned either by completion of pro formas for each patient or in electronic format using either an Access (Microsoft) database or “in-house” database. The pro formas were entered directly into an Access database, at which time validation comprising mainly of checks for duplicate entries and dates could be carried out. There are separate pro formas for the operation and follow-up information. All of this data was transferred to the web-based system and has been included in the analyses.

The data presented here are a summary of the data extracted from the web-based database on 26<sup>th</sup> April 2010 and relate to operations performed during the whole of 2009. Follow-up information was returned on 14.1% (73/519) of the cystectomies; 19.6% (344/1757) of the radical prostatectomies and 12.2% (181/1482) of the nephrectomies.

For the ranked charts (1, 2, 21, 22, 25, 26, 47, 48, 51, 52, 69 & 70) the individual consultant or centre identification numbers were removed and replaced with rank numbers starting at 1. A unique, confidential "Ranking Sheet" was prepared for each surgeon to enable them to identify their rank in every chart. For those charts where overall figures for the entire database are shown the ranking sheet displays the consultant's individual figures. No one else can identify the results of an individual consultant. The ranked charts comprise single bars ranked from left to right in the ascending order of the data item being measured with, in addition, the 25, 50, and 75 percentiles. Where percentages are included figures have been rounded up to one decimal point.

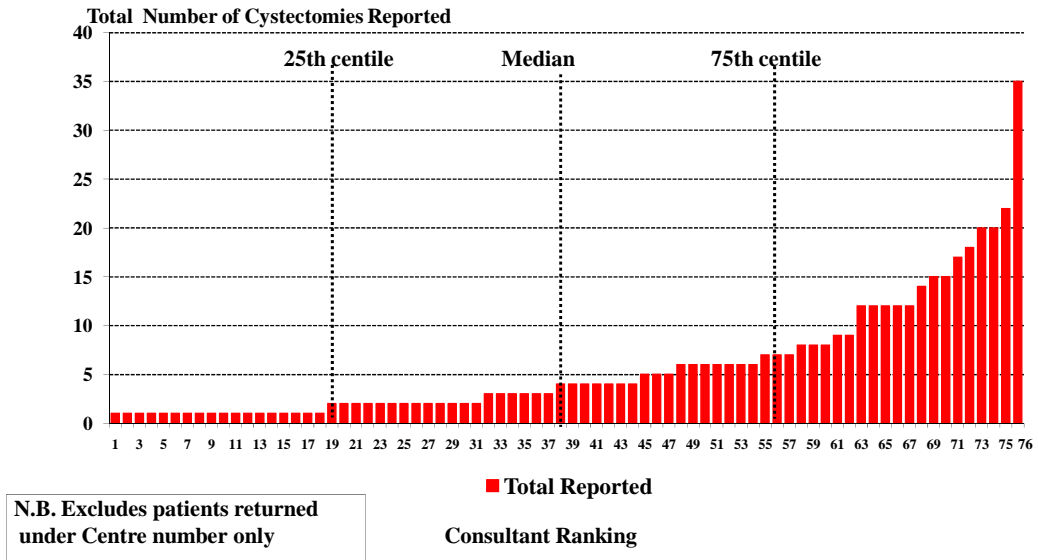
A personal ranking sheet for each consultant for each of the three procedures was issued individually to go with this chart book.

Sarah Fowler  
BAUS Cancer Registry (BCR) Manager  
May 2010

## A. Cystectomies for malignant disease

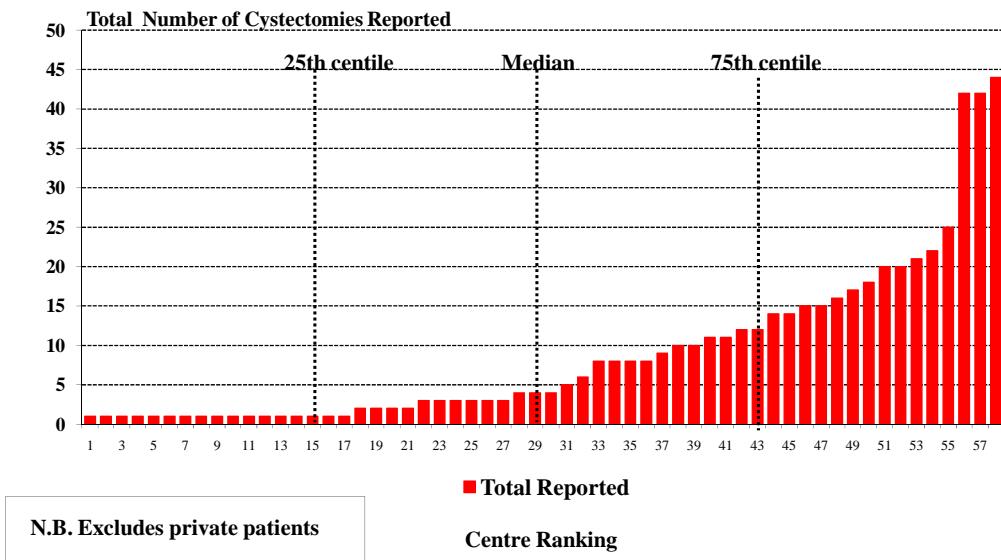
### Chart 1

**Total Number of Cystectomies Reported per Consultant**  
**Median: 4 (Interquartile Range 2 - 7)**



### Chart 2

**Total Number of Cystectomies Reported per Centre**  
**Median: 4 (Interquartile Range 1 - 14)**



### Chart 3

#### Indication for Cystectomy

Indication	Number & percentage of total (541)	
	N	%
Muscle invasive TCC	254	48.9
Uncontrolled superficial disease	84	16.2
Salvage after radiotherapy	17	3.3
Squamous cell Ca	16	3.1
Primary CIS	14	2.7
Gynaecological Ca	9	1.7
Primary adenocarcinoma	8	1.5
Sarcoma	3	0.6
Secondary adenocarcinoma	2	0.4
Other	30	5.8
Not Recorded	82	15.8

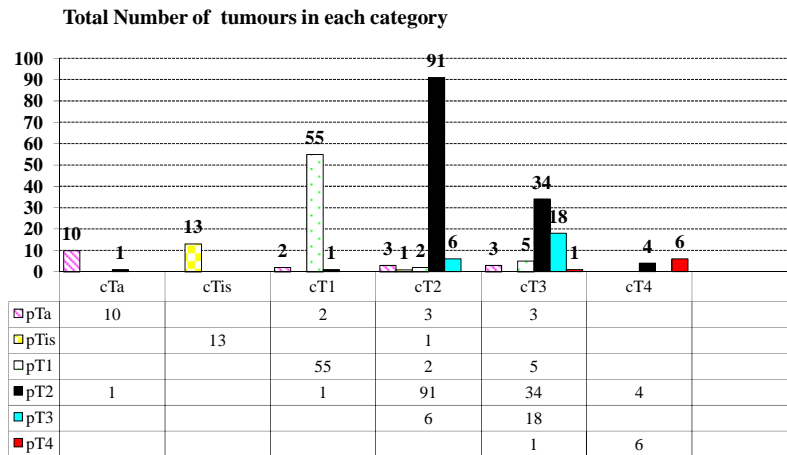
### Chart 4

#### Cystectomy Pre-operative Clinical Staging Staging could be estimated in 67.6% (351/519) cases

Known Staging	Total Known	
	N	%
Stage 0a (T <sub>a</sub> N <sub>0</sub> M <sub>0</sub> )	14	4.0
Stage 0is (T <sub>is</sub> N <sub>0</sub> M <sub>0</sub> )	17	4.8
Stage I (T <sub>1</sub> N <sub>0</sub> M <sub>0</sub> )	71	20.2
Stage II (T <sub>2a</sub> , 2b N <sub>0</sub> M <sub>0</sub> )	129	36.8
Stage III (T <sub>3a</sub> , 3b, 4a N <sub>0</sub> M <sub>0</sub> )	83	23.6
Stage IV (T <sub>4b</sub> N <sub>0</sub> M <sub>0</sub> Any T N <sub>1</sub> , N <sub>2</sub> , N <sub>3</sub> M <sub>0</sub> Any T any N M <sub>1</sub> )	37 including 6 with metastases	10.5 1.7

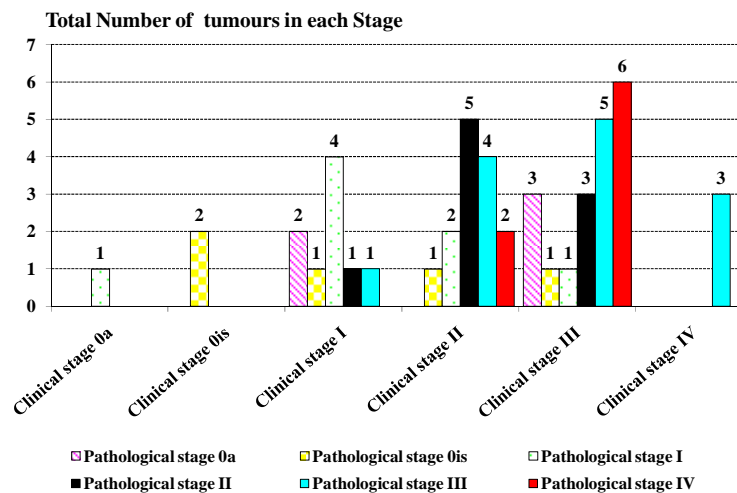
## Chart 5

### Cystectomy - Comparison of Pre-operative clinical & pathological Categories



## Chart 6

### Cystectomy - Comparison of Pre-operative clinical & Post-operative pathological staging





## Chart 7

### **Cystectomy - Pre-operative Imaging** Total Numbers Reported with those as only Imaging method in ( ) Information recorded in 88% cases (456/519)

Imaging Method	N
CT Scan	240 (84)
MRI	96 (12)
Bone Scan	39 (1)
IVU	31 (2)
Others	84 (7)
None	185 (185)

## Chart 8

### **Cystectomy - Pre-operative Serum Creatinine**

Serum Creatinine Level $\mu\text{mols/l}$	N	% of total (519)
0 – 120 $\mu\text{mols/l}$	393	75.7
121 - 200 $\mu\text{mols/l}$	67	12.9
> 200 $\mu\text{mols/l}$	8	1.5
Not recorded	51	9.8

## Chart 9

### Cystectomy - Other Pre-operative findings

	N	% of total reporting
Pre operative Radiotherapy	32/393	8.1
Pre operative Neoadjuvant Chemotherapy	122/404	30.2
Synchronous Upper tract disease	17/464	3.7

## Chart 10

### Cystectomy - Status Upper Tracts

Status	Number & percentage of total reported (519)	
	N	%
Normal	327	63.0
Tumour	7	1.3
Hydronephrosis – left	31	6.0
Hydronephrosis – right	41	7.9
Hydronephrosis – bilateral	21	4.0
Non – functioning kidney	4	0.8
Other	12	2.3
Not recorded	76	14.6

## Chart 11

### Cystectomy Pre-operative Potency

	N	% of total (519)
<b>Impotent</b>	<b>63</b>	<b>12.1</b>
<b>Partially potent</b>	<b>53</b>	<b>10.2</b>
<b>Fully potent</b>	<b>117</b>	<b>22.5</b>
<b>Potency not recorded</b>	<b>286</b>	<b>55.1</b>

## Chart 12

### Cystectomy Pre-operative Continence

	N	% of total (519)
<b>Complete</b>	<b>292</b>	<b>56.3</b>
<b>Minor stress leakage</b>	<b>15</b>	<b>2.9</b>
<b>1 pad per day</b>	<b>0</b>	<b>-</b>
<b>&gt; 1 pad per day</b>	<b>5</b>	<b>1.0</b>
<b>Appliance</b>	<b>20</b>	<b>3.9</b>
<b>Continence not recorded</b>	<b>187</b>	<b>36.0</b>

## Chart 13

### **Cystectomy Grade of Main Operating Surgeon** with numbers & percentage reported as being a supervised training operation

	<b>Total Number</b>	<b>% of total (519)</b>	<b>Supervised training operation</b>	<b>%</b>
<b>Consultant</b>	<b>448</b>	<b>86.3</b>	<b>159/367</b>	<b>43.3</b>
<b>Specialist Registrar</b>	<b>37</b>	<b>7.1</b>	<b>26/37</b>	<b>70.2</b>
<b>Other</b>	<b>28</b>	<b>5.4</b>	<b>1/28</b>	<b>3.6</b>
<b>Surgeon not recorded</b>	<b>6</b>	<b>1.2</b>	<b>-</b>	<b>-</b>

## Chart 14

### **Cystectomy - Diversion procedure** 56 laparoscopic procedures were reported\* 73 combined synchronous urethrectomies 29 combined synchronous nephroureterctomies

	<b>N</b>	<b>% of total (519)</b>
<b>Ileal conduit</b>	<b>381</b>	<b>73.4</b>
<b>Orthotopic</b>	<b>39</b>	<b>7.5</b>
<b>Rectal diversion</b>	<b>0</b>	<b>0.0</b>
<b>Continent cutaneous diversion</b>	<b>8</b>	<b>1.5</b>
<b>Other</b>	<b>9</b>	<b>1.7</b>
<b>Not recorded</b>	<b>82</b>	<b>15.8</b>

64.1% (25/39) of the orthotopics were Studer  
\* Includes 15 performed robotically (da Vinci)

## Chart 15

### Cystectomy Lymph Node Dissection

	N	% of total (519)
None	100	19.3
Palpable only	32	6.2
Below bifurcation of common iliac	179	34.5
Extended above bifurcation of common iliac	121	23.3
Not recorded	87	16.8

## Chart 16

### Cystectomies

- **Median duration of operation:**
- All patients = 285 mins; Range: 60 – 675; (378 patients)
- Patients having LND = 300 mins; Range: 60 – 675; (298 patients)
- Patients with no LND = 278 mins; Range: 60 – 592; (72 patients)
- **Median number of units of blood transfused = 0**  
Range: 0 - 10  
(reported in 83.0% (431) patients)
- **Median measured blood loss = 500 mls**  
Range: 0 – 6,500  
(reported in 88.2% (458) patients)
- **Median post-operative stay = 14 days (excluding deaths)**  
Range: 0 - 227  
(reported in 63.6% (330) patients)

## Chart 17

### Cystectomies Complications

		N	%
<b>Intra-operative complications:</b>		<b>55/470</b>	<b>11.7</b>
	Bleeding	6/470	1.3
	Rectal Injury	4/470	0.9
	Iliac vein injury	3/470	0.7
	Other / NR	32/470	6.8
<b>Post-operative complications:</b>		<b>116/414</b>	<b>28.0</b>
	Infections/ Septicaemia	25/414	6.0
	Prolonged Ileus	23/414	5.6
	Leaks	12/414	2.9
	Bleeding	6/414	1.5
	Other / NR	50/414	12.1

## Chart 18

### Cystectomy - Significance of Complications

Overall morbidity Rate = 28.7% (149/519)

30 day mortality Rate = 0.96%(5/519)

	Intra-operative		Post-operative	
	N	%	N	%
<b>No action required</b>	2	3.6	5	4.3
<b>Contributed to death</b>	2	3.6	6	5.2
<b>Delayed discharge</b>	7	12.7	36	31.0
<b>Required medical treatment</b>	11	20.0	41	35.3
<b>Required surgery</b>	4	7.3	13	11.2
<b>Not recorded</b>	29	52.7	15	12.9

## Chart 19

### Cystectomy - Operative Histology reported in 12.7% (66/519) cases

Histology	Number & percentage of total known (66)	
	N	%
No cancer	6	9.1
Muscle invasive TCC	37	56.1
SCC	3	4.5
Primary CIS	5	7.6
Sarcoma	0	-
Gynaecological ca	3	4.5
Primary adenocarcinoma	1	1.5
Secondary adenocarcinoma	0	-
Other	11	16.7

## Chart 20

### Cystectomy Follow ups

Follow up recorded in 14.1% (73 / 519) patients

Median time to latest Follow-up = 81 days; range 11 – 399 days

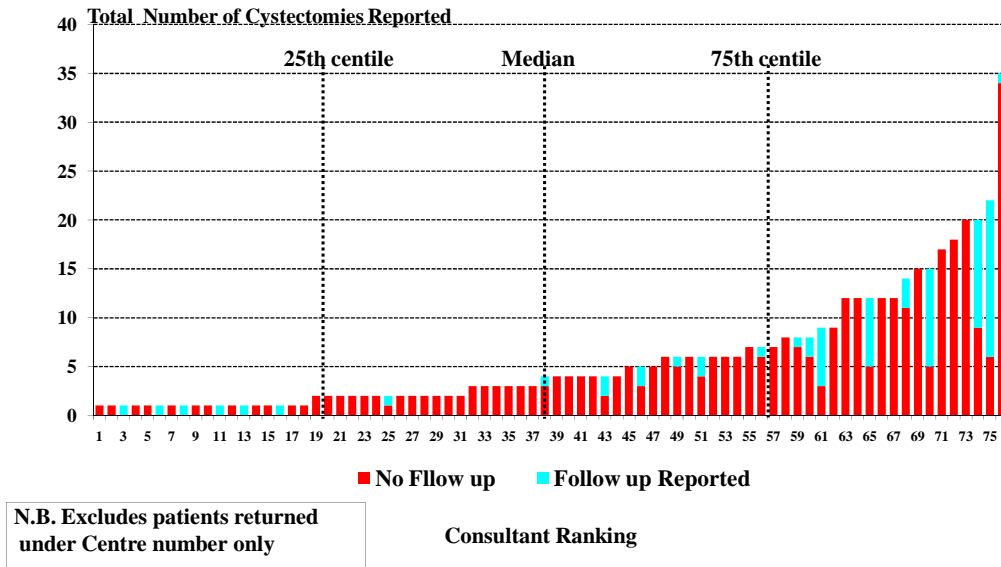
Median number of Follow-ups = 0; Range: 0 - 2

Time to latest follow-up:

Time from Operation to follow-up	N	% of total (73)
0 – 90 days	43	58.9
91 – 180 days	23	31.5
181 – 360 days	6	8.2
>=361 days	1	1.4

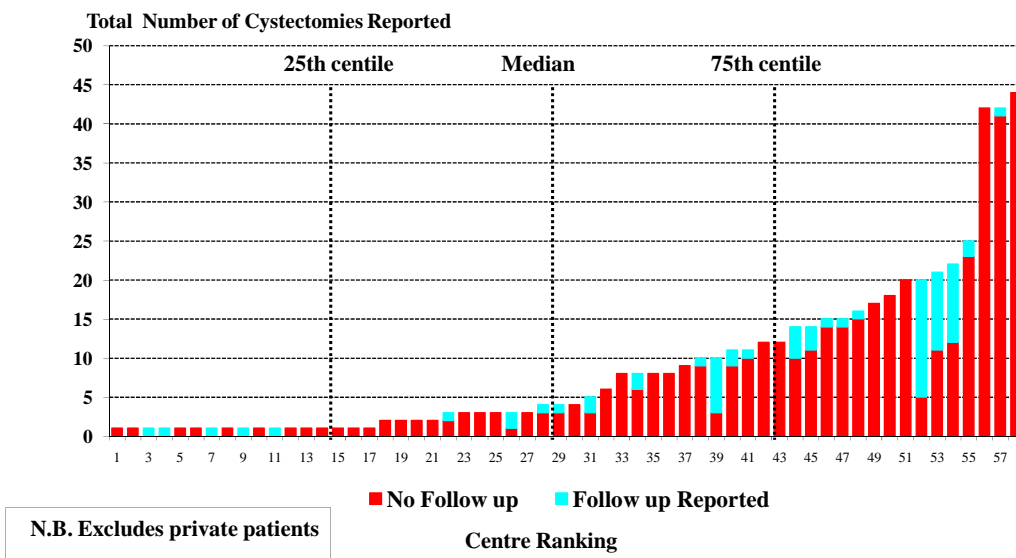
## Chart 21

**Total Number of Cystectomies Reported per Consultant  
Including number with follow-ups  
Follow up recorded in 14.1% (73 / 519) patients**



## Chart 22

**Total Number of Cystectomies Reported per Centre  
Including number with follow-ups  
Follow up recorded in 14.1% (73 / 519) patients**





## Chart 23

**Cystectomy - Current Status**  
**Follow up recorded in 14.1% (73 / 519) patients**  
**Median time to latest Follow-up = 81 days; range 11 – 399 days**

	N	% of total (73)
Alive with no evidence of bladder cancer	65	89.0
Alive with local recurrence of bladder cancer	1	1.4
Alive with lymph node involvement	2	2.7
Alive with metastatic disease	2	2.7
Dead	1	1.4
Not recorded	2	2.7

Late complications were reported in 16/73 (21.9%) patients

## Chart 24

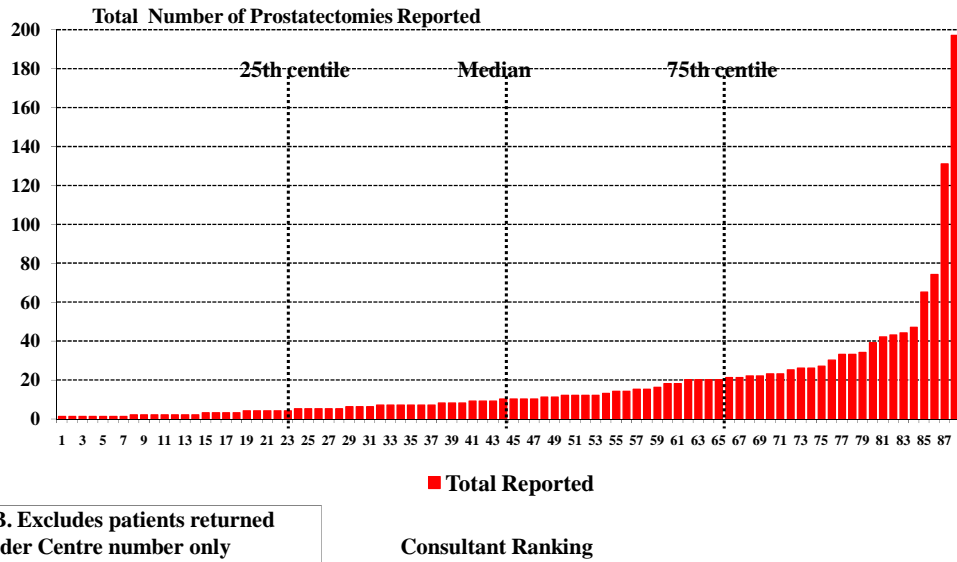
**Cystectomy - Current Status**  
**Follow up recorded in 14.1% (73 / 519) patients**  
**Median time to latest Follow-up = 81 days; range 11 – 399 days**

Time to follow up	N	% of total (73)	0 – 90 days		91-180 days		181 – 360 days		≥361 days	
			N	%	N	%	N	%	N	%
Alive with no evidence of bladder cancer	65	89.0	38	90.5	21	87.5	5	83.3	1	100.0
Alive with local recurrence of bladder cancer	1	1.4	0	-	0	-	1	16.7	-	-
Alive with lymph node involvement by bladder ca	2	2.7	1	2.4	1	4.2	0	-	-	-
Alive with metastatic disease	2	2.7	2	4.8	0	-	0	-	-	-
Dead	1	1.4	0	-	1	4.2	0	-	-	-
Not recorded	2	2.7	1	2.4	1	4.2	0	-	-	-

## B. Radical Prostatectomies

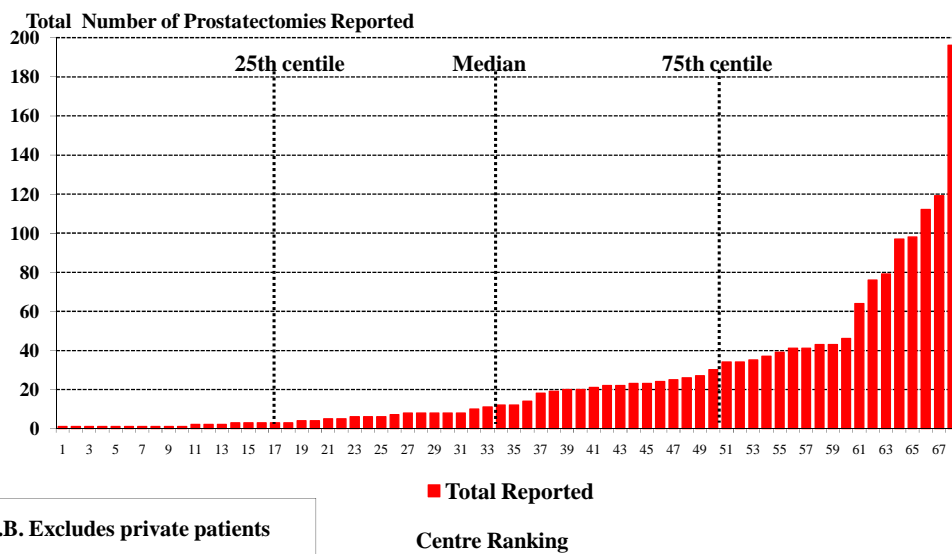
### Chart 25

**Total Number of Prostatectomies Reported per Consultant**  
**Median: 10 (Interquartile Range 4 - 21)**



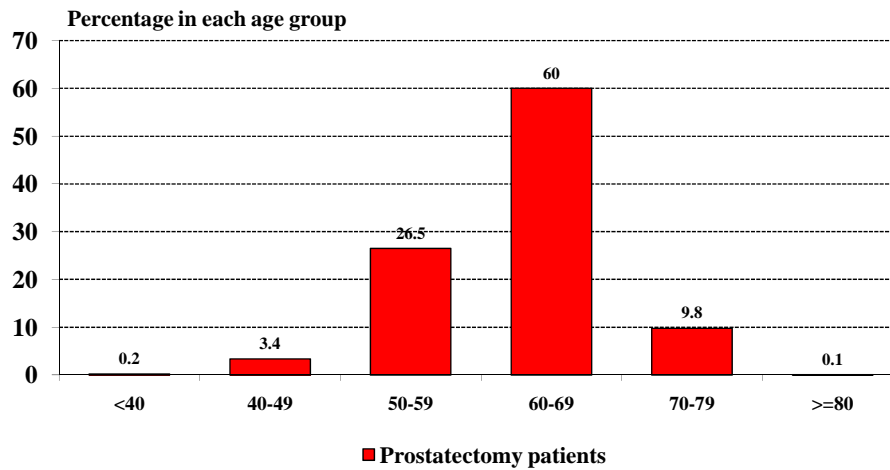
### Chart 26

**Total Number of Prostatectomies Reported per Centre**  
**Median: 12 (Interquartile Range 3 - 34)**



## Chart 27

### Percentage Age Distribution - Prostatectomies Median : 60 Years; Range 35 -80 (n= 1749\*)



Age could be calculated when both date of birth and operation date were recorded = 1749/1757 (99.5%)

## Chart 28

### Prostatectomy Presentation

Presentation	N	% of total (1757)
Via Screening or Case Finding	824	46.9
LUTS	245	13.9
Other	444	25.3
Not recorded	244	13.9

Other presentation was only recorded in 12.8% (57/444) cases

3.9% (63/1587) were reported as having had a previous TURP

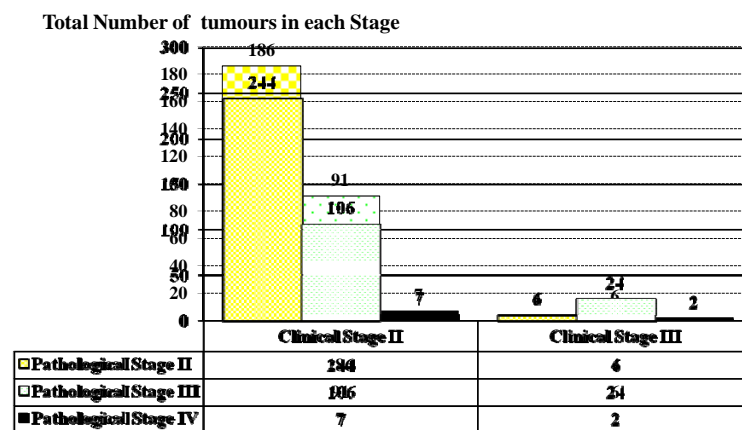
## Chart 29

### Prostatectomy Pre-operative Clinical Staging Staging could be estimated in 75.1% (1320/1757) cases

Known Staging	Total Known	
	N	%
Stage I (T1a N0 M0)	6	0.5
Stage II (T1b, 1c, 1, 2 N0 M0)	T1,1a,1b - 100	7.6
	T1c - 569	43.1
	T2 - 529	40.1
Stage III (T3 N0 M0)	105	8.0
Stage IV (T4 N0 M0 Any T N1 M0 Any T any N M1)	11	0.8

## Chart 30

### Prostatectomies Comparison of clinical & pathological staging



## Chart 31

### Staging of Prostate Tumours by PSA

Numbers falling in each category

Pre-operative PSA was recorded in 96.7% patients (1699/1757)

Staging could be estimated in 76.6% (1301/1699) of these cases

Known Clinical Staging	Total Patients	PSA 0-5		PSA 6-10		PSA 11-20		PSA 21-50		PSA > 50	
		N	%	N	%	N	%	N	%	N	%
Stage I T1a N0 M0	6	4	1.5	2	0.3	0	-	0	-	0	-
Stage II T1b, 1c, 1, 2, N0 M0	1180	242	89.6	642	92.1	249	89.9	44	84.6	3	60.0
Stage III T3 N0 M0	104	22	8.1	48	6.9	25	9.0	8	15.4	1	20.0
Stage IV (T4 N0 M0 Any T N1 M0 Any T any N M1)	11	2	0.7	5	0.7	3	1.1	0	-	1	20.0
Totals	1301	270		697		277		52		5	

## Chart 32

### Gleason Sum Scores by Age Group - Prostatectomies

Number falling into each category

Gleason scores were recorded in 86.5% (1519/1757)

Age could be recorded in 99.5% (1512/1519) of these

Age Group	Total Patients	Gleason sum 2 – 4		Gleason sum 5 – 6		Gleason sum 7		Gleason sum 8 – 10	
		N	%	N	%	N	%	N	%
< 60	453	0	-	250	55.2	183	40.4	20	4.4
60 – 64	485	0	-	228	47.0	228	47.0	29	6.0
65 – 69	423	0	-	195	46.1	203	48.0	25	5.9
70 – 74	142	0	-	52	36.6	75	52.8	15	10.6
75 – 79	9	0	-	3	33.3	4	44.4	2	22.2
>=80	0	0		0	-	0	-	0	-
Totals	1512	0	-	728	48.2	693	45.8	91	6.0

Chart 33

### Gleason Sum Score Related to Age

Gleason scores were recorded in 86.5% (1519/1757)  
 Age could be recorded in 99.5% (1512/1519) of these

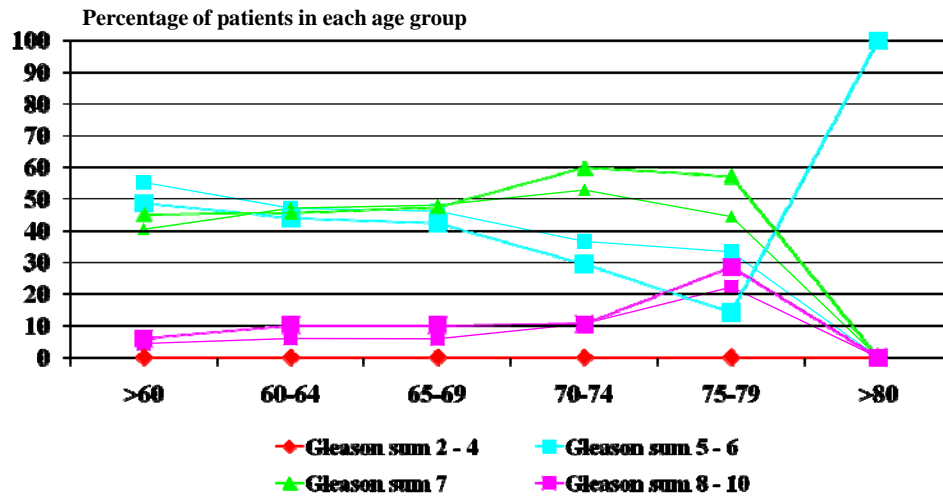


Chart 34

### Prostatectomy Pre-operative Potency

	N	% of total (1757)
Impotent	89	5.1
Partially potent	281	16.0
Fully potent	728	41.4
Potency not recorded	659	37.5

## Chart 35

### Prostatectomy Pre-operative Continence

	N	% of total (1757)
Complete	1191	67.8
Minor stress leakage	15	0.9
1 pad per day	0	-
> 1 pad per day	0	-
Appliance	1	0.1
Continence not recorded	550	31.3

## Chart 36

### Prostatectomy Grade of Main Operating Surgeon with numbers & percentage reported as being a supervised training operation

	Total Number	% of total (1757)	Supervised training operation	%
Consultant	1501	85.4	316/1320	23.9
Specialist Registrar	84	4.8	73/81	90.1
Other	126	7.2	6/126	4.8
Surgeon not recorded	46	2.6	-	-

### Chart 37

#### Prostatectomy - Procedure Nerve sparing

Nerve Sparing	N	% of total (1757)
Bilateral	633	36.0
Unilateral	317	18.0
None	614	34.9
Not recorded	193	11.0

### Chart 38

#### Prostatectomy Procedure - Approach

	N	% of total (1757)
Retropubic	906	51.6
Perineal	14	0.8
Other	106	6.0
Not recorded	731	41.6



## Chart 39

### Prostatectomy Procedure – Laparoscopic Known Conversion rate = 1.4% (13/938)\*

Laparoscopic	N	% of total (1757)
Yes	1044	59.4
No	669	38.1
Not recorded	44	2.5

\*Conversion reasons were included in 10/13 and included bleeding in 5 cases

203 (11.6%) procedures were performed robotically (da Vinci)

## Chart 40

### Prostatectomies

- 37.9% had Lymph Node dissection (605/1596 patients)
- Median duration of operation:
  - All patients = 170 mins; Range: 50 - 420; (1140 patients)
  - Patients having LND = 167 mins; Range: 60 - 360; (425 patients)
  - Patients with no LND = 170 mins; Range: 50 – 420; (692 patients)
- Median number of units of blood transfused = 0  
Range: 0 - 9  
(reported in 93.3% (1639) patients)
- Median measured blood loss = 400 mls  
Range: 0 – 8,000  
(reported in 92.0% (1617) patients)
- Median post-operative stay = 3 days (excluding deaths)  
Range: 0 - 122  
(reported in 55% (1001) patients)

## Chart 41

### Prostatectomies - Procedure

	Procedure	N	Median	Range
Duration of Operation (mins)	Total patients	1140	170	50 – 420
	Retropubic	643	170	60 – 420
	Perineal	12	95	70 - 120
	Laparoscopic	736	180	60 - 384
Units of Blood Transfused	Total patients	1639	0	0 – 9
	Retropubic	879	0	0 – 9
	Perineal	13	0	0 - 0
	Laparoscopic	1024	0	0 – 5
Measured Blood Loss (mls)	Total patients	1617	200	0 – 8,000
	Retropubic	833	400	0 – 8,000
	Perineal	13	200	0 – 1,000
	Laparoscopic	986	200	0 – 4,000
Post –op Length of Stay (days)	Total patients	970	3	0 – 122
	Retropubic	533	3	0 – 45
	Perineal	12	3	1 – 11
	Laparoscopic	611	3	0 – 122

## Chart 42

### Prostatectomies Complications

		N	%
Intra-operative complications:		80/1757	4.5
	Bleeding	14/1757	0.8
	Rectal Injury	6/1757	0.3
	Difficult access/procedure	8/1757	0.5
	Other / NR	52/1757	2.9
Post-operative complications:		113/1757	6.4
	Infections	6/1757	0.3
	Ileus	2/1757	0.1
	Leaks	3/1757	0.2
	Other / NR	102/1156	5.8

### Chart 43

#### Prostatectomy - Significance of Complications

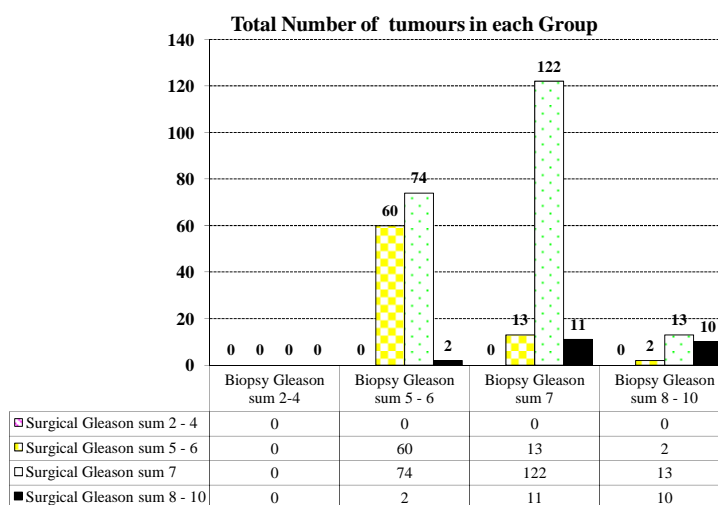
Overall morbidity Rate = 9.1% (160/1757)

30 day mortality Rate = 0.05% (1/1757)

	Intra-operative		Post-operative	
	N	%	N	%
No action required	16	33.3	12	14.5
Contributed to death	0	-	0	0.0
Delayed discharge	2	4.2	19	22.9
Required medical treatment	11	22.9	33	39.8
Required surgery	5	10.4	13	15.7
Not recorded	16	33.3	6	7.2

### Chart 44

#### Prostatectomies Comparison of Pre-operative Biopsy and Operative Surgical Gleason Sum Scores



## Chart 45

### Prostatectomy Pathology

	N	% of total known
Known Positive Lymph Nodes	8/287	2.8
Known Seminal Vesical Involvement	19/308	6.2

## Chart 46

### Prostatectomy Follow ups

Follow up recorded in 19.6% (344 / 1757) patients

Median time to latest Follow-up = 92 days; range 9 – 457 days

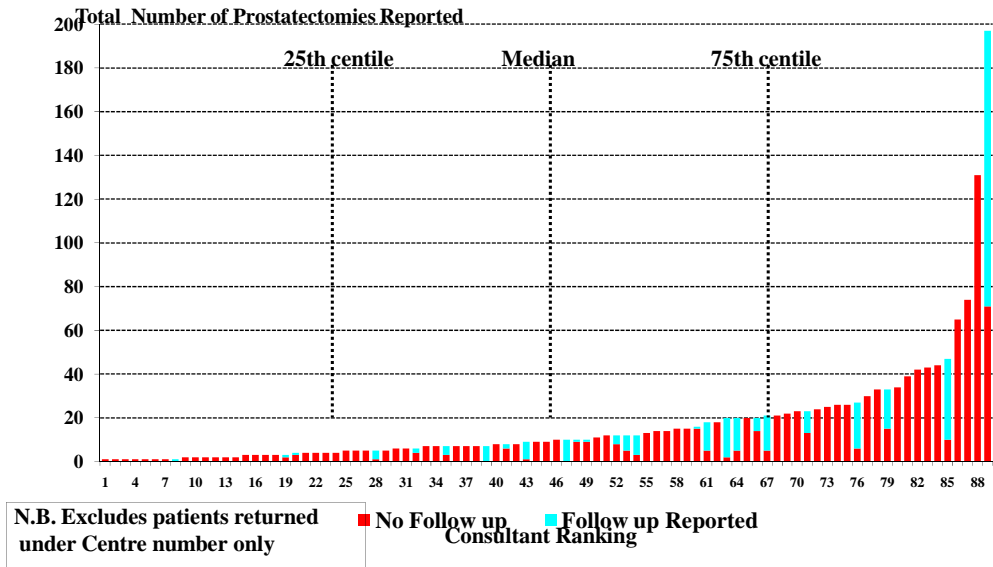
Median number of Follow-ups = 0; Range: 0 - 4

Time to latest follow-up:

Time from Operation to follow-up	N	% of total (344)
0 – 90 days	161	46.8
91 – 180 days	123	35.8
181 – 360 days	52	15.1
>=361 days	8	2.3

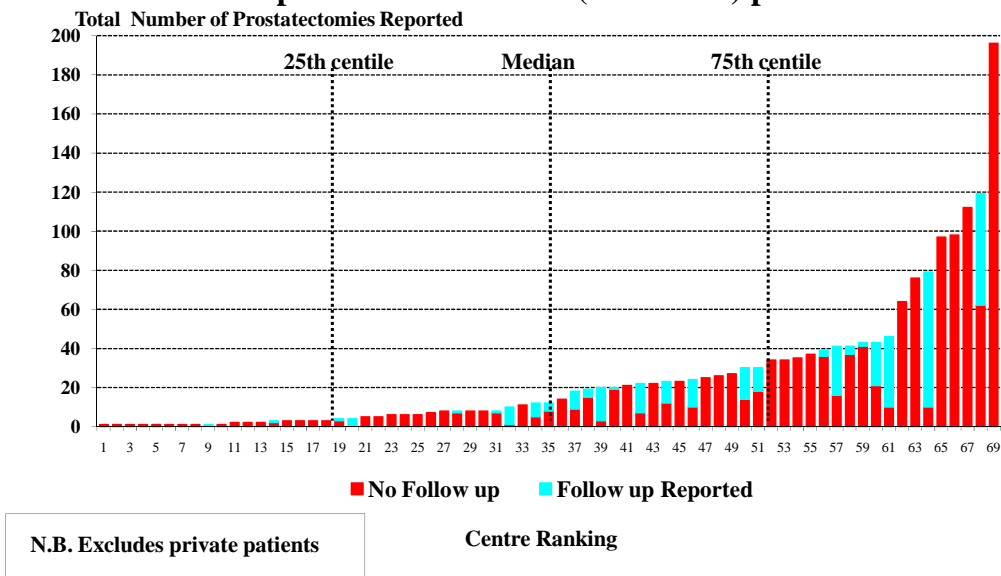
**Chart 47**

**Total Number of Prostatectomies Reported per Consultant  
Including number with follow-ups  
Follow up recorded in 19.6% (344 / 1757) patients**



**Chart 48**

**Total Number of Prostatectomies Reported per Centre  
Including number with follow-ups  
Follow up recorded in 19.6% (344 / 1757) patients**



## Chart 49

**Prostatectomy - Current Status**  
**Follow up recorded in 19.6% (344 / 1757) patients**  
**Median time to latest Follow-up = 92 days; range 9 – 457 days**

	N	% of total (391)
Alive with no evidence of prostate cancer	313	91.0
Alive with local recurrence of prostate cancer	14	4.1
Alive with lymph node involvement	1	0.3
Alive with metastatic disease	2	0.6
Dead	1	0.3
Not recorded	13	3.8

Late complications were reported in 2.6% (9/344) patients:

6 Anastamotic strictures

1 Urethral stricture

2 DVT

## Chart 50

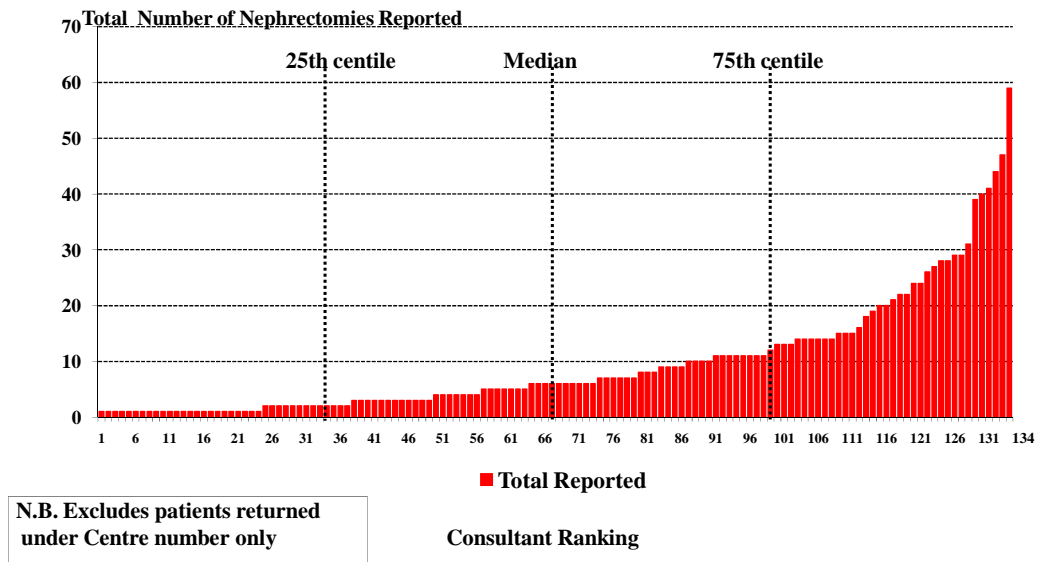
**Prostatectomy - Current Status**  
**Follow up recorded in 19.6% (344 / 1757) patients**  
**Median time to latest Follow-up = 92 days; range 9 – 457 days**

Time to follow up	N	% of total (344)	0 – 90 days		91-180 days		181 – 360 days		≥361 days	
			N	%	N	%	N	%	N	%
Alive with no evidence of prostate cancer	313	91.0	138	90.8	121	93.8	47	85.5	7	87.5
Alive with local recurrence of prostate cancer	14	4.1	5	3.3	5	3.9	3	5.5	1	12.5
Alive with lymph node involvement	1	0.3	1	0.7	0	0.0	0	0.0	0	0.0
Alive with metastatic disease	2	0.6	1	0.7	0	0.0	1	1.8	0	0.0
Dead	1	0.3	1	0.7	0	0.0	0	0.0	0	0.0
Not recorded	13	3.8	6	3.9	3	2.3	4	7.3	0	0.0

## C. Nephrectomies

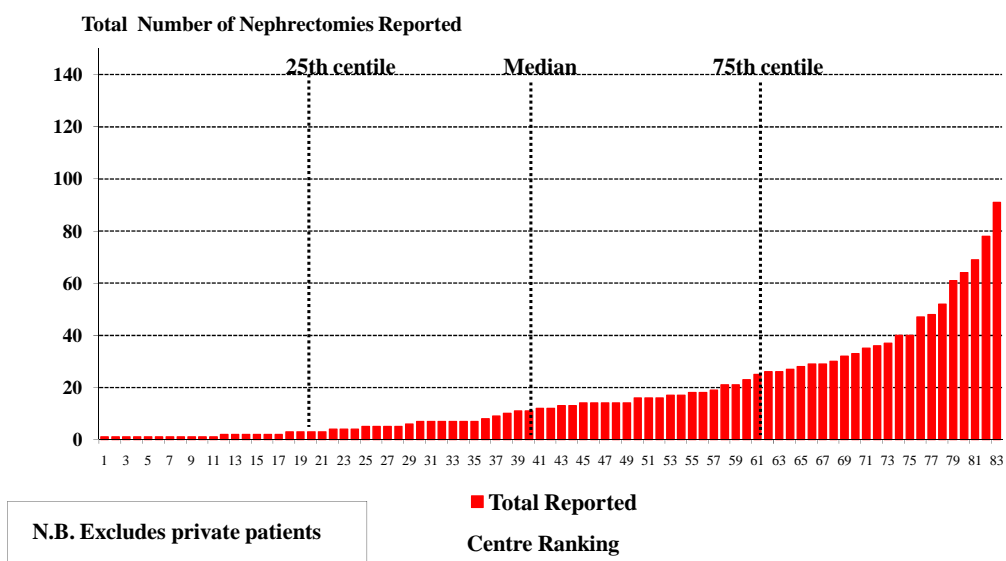
### Chart 51

**Total Number of Nephrectomies Reported per Consultant**  
**Median: 6 (Interquartile Range 2 - 13)**



### Chart 52

**Total Number of Nephrectomies Reported per Centre**  
**Median: 11 (Interquartile Range 3 - 23)**



## Chart 53

### Nephrectomy - Pre-operative presentation

	N	% of total (1482)
<b>Incidental finding with no symptoms</b>	<b>412</b>	<b>27.8</b>
<b>Haematuria</b>	<b>326</b>	<b>22.0</b>
<b>Other:</b>	<b>460</b>	<b>27.2</b>
Weight Loss	28	1.9
Other Ca	15	1.0
Pain	33	2.2
Other/Not recorded	399	26.9
<b>Not recorded</b>	<b>269</b>	<b>18.2</b>

## Chart 54

### Nephrectomies – Haematology at Presentation

	N	Median	Range
<b>Hb (g/L)</b>	<b>892</b>	<b>13</b>	<b>7 – 167</b>
<b>Total WBC (* 10<sup>9</sup> / L)</b>	<b>819</b>	<b>8</b>	<b>2 – 514</b>
<b>Neutrophils (* 10<sup>9</sup> / L)</b>	<b>706</b>	<b>5</b>	<b>2 – 412</b>
<b>Lymphocytes (* 10<sup>9</sup> / L)</b>	<b>468</b>	<b>2</b>	<b>2 – 114</b>
<b>Platelets (* 10<sup>9</sup> / L)</b>	<b>791</b>	<b>268</b>	<b>2 - 3337</b>



## Chart 55

### Nephrectomy - Pre-operative Serum Creatinine

Serum Creatinine Level $\mu\text{mols/l}$	N	% of total (1482)
0 – 120 $\mu\text{mols/l}$	1146	77.3
121 - 200 $\mu\text{mols/l}$	153	10.3
> 200 $\mu\text{mols/l}$	18	1.2
Not recorded	165	11.1

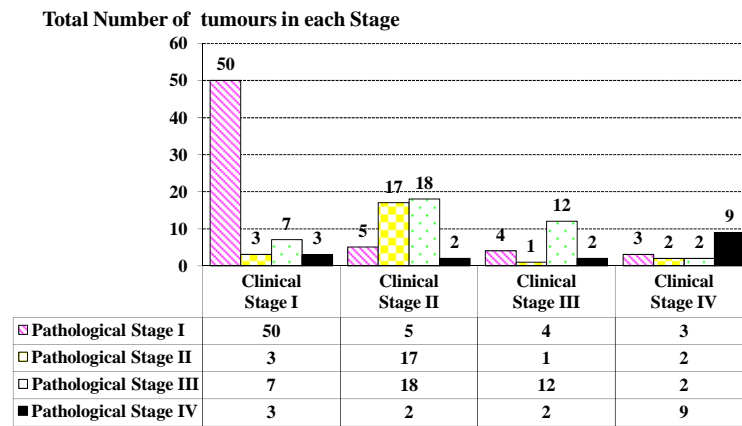
## Chart 56

### Nephrectomy Pre-operative Clinical Staging Staging could be estimated in 69% (1022/1482) cases

Known Staging	Total Known N	%
Stage I (T1 N0 M0)	474	46.4
Stage II (T2 N0 M0)	196	19.2
Stage III (T1, T2, T3 N0, N1 M0)	207	20.3
Stage IV (T4 N0, N1 M0 Any T N2 M0 Any T any N M1)	145 including 81 with metastases	14.2 7.9

**Chart 57**

### Nephrectomies Comparison of clinical & pathological staging



**Chart 58**

### Nephrectomy Grade of Main Operating Surgeon with numbers & percentage reported as being a supervised training operation

	Total Number	% of total (1482)	Supervised training operation	%
Consultant	963	65.0	216/867	24.9
Specialist Registrar	169	11.4	153/167	91.6
Other / Not recorded	350	23.6	6/153	3.9

## Chart 59

### Nephrectomy – Procedure

	N	% of total (1482)
Radical Nephrectomy	993	67.0
Partial Nephrectomy	153	10.3
Simple Nephrectomy	46	3.1
Nephroureterectomy	243	16.4
Heminephrectomy	1	0.1
Other	30	2.0
Not Recorded	16	1.1

The vena cava was reported as being explored in 21 cases:

- 3 – level 1; 5 – level 2; 1 – level 3; 3 – level 4 and 9 not recorded
- 5 – liver mobilisation; 2 cardiopulmonary bypass; 2 circulatory arrest; 8 complete excision from IVC

## Chart 60

### Nephrectomies – Surgical Approach Known Laparoscopic Conversion rate = 5.7% (43/752)\*

Approach	N	% of total (1482)
Open	525	35.4
Laparoscopic	957	64.6

\* Conversion reasons

- 15 due to bleeding
- 11 due to failure to progress
- 17 other / not recorded

## Chart 61

### Nephrectomy Approach by Pre-operative Clinical Staging Staging could be estimated in 69% (1022/1482) cases

Known Staging	Total	Open		Laparoscopic	
	N	N	%	N	%
Stage I (T1 N0 M0)	457	337	73.7	120	26.3
Stage II (T2 N0 M0)	181	107	59.1	74	40.9
Stage III (T1, T2, T3 N0, N1 M0)	198	118	59.6	80	40.4
Stage IV (T4 N0, N1 M0 Any T N2 M0 Any T any N M1)	140	60	42.9	80	57.1

## Chart 62

### Nephrectomies

- 10% had Lymph Node dissection (121/1212 patients)
- Median duration of operation = 155 minutes  
Range: 30 - 840  
(reported in 74% (1098) patients)
- Median number of units of blood transfused = 0  
Range: 0 - 32  
(reported in 72.4% (1073) patients)
- Median measured blood loss = 100 mls  
Range: 0 - 10,000  
(reported in 69.5% (1031) patients)
- Median post-operative stay = 5 days (excluding deaths)  
Range: 0 - 96  
(reported in 57.4% (851) patients)

## Chart 63

### Nephrectomies - Procedure

	Procedure	N	Median	Range
Duration of Operation (mins)	Total patients	1098	155	30 - 840
	Open	358	150	45 - 840
	Laparoscopic	693	167	57 - 575
	LND	107	180	60 - 510
Units of Blood Transfused	Total patients	1073	0	0 - 32
	Open	345	0	0 - 32
	Laparoscopic	681	0	0 - 12
Measured Blood Loss (mls)	Total patients	1031	100	0 - 10,000
	Open	327	200	0 - 10,000
	Laparoscopic	657	50	0 - 3,000
Post -op Length of Stay (days)	Total patients	851	5	0 - 96
	Open	273	7	0 - 78
	Laparoscopic	538	4	0 - 96

## Chart 64

### Nephrectomies Complications

		N	%
Intra-operative complications:		54/951	5.7
Post-operative complications:		96/951	10.1
	Infections	8/951	0.8
	Respiratory	5/951	0.5
	Ileus	5/951	0.5

42 complications were reported as being Major and 100 Minor

## Chart 65

### Nephrectomy - Significance of Complications

Overall morbidity Rate = 15.6% (231/1482)

30 day mortality Rate = 1.3% (15/1118)

	Intra-operative		Post-operative	
	N	%	N	%
No action required	5	8.9	14	11.8
Contributed to death	1	1.8	1	0.8
Delayed discharge	3	5.4	30	25.2
Required medical treatment	2	3.6	41	34.5
Required surgery	6	10.7	20	16.8
Not recorded	39	69.6	13	10.9

## Chart 66

### Nephrectomies – Parenchymal Tumours

Predominant cell type

Reported in 100% parenchymal tumours (145)

Predominant Cell Type	N	% of total reported (145)
Clear Cell	112	77.2
Papillary	13	9.0
Oncocytoma	8	5.5
Chromophobe	6	4.1
Collecting duct	0	-
Other	6	4.1

## Chart 67

### Nephrectomies – Urothelial Tumours Site of Tumour Reported in 96.8% urothelial tumours (30/31)

Site of Tumour	N	% of total reported (30)
Calyx	3	10.0
Pelvis	12	40.0
PUJ	2	6.7
Ureter	8	26.7
Multiple sites	5	16.7

## Chart 68

### Nephrectomy Follow ups

Follow up recorded in 12.2% (181 / 1482) patients

Median time to latest Follow-up = 77 days; range 16 – 423 days

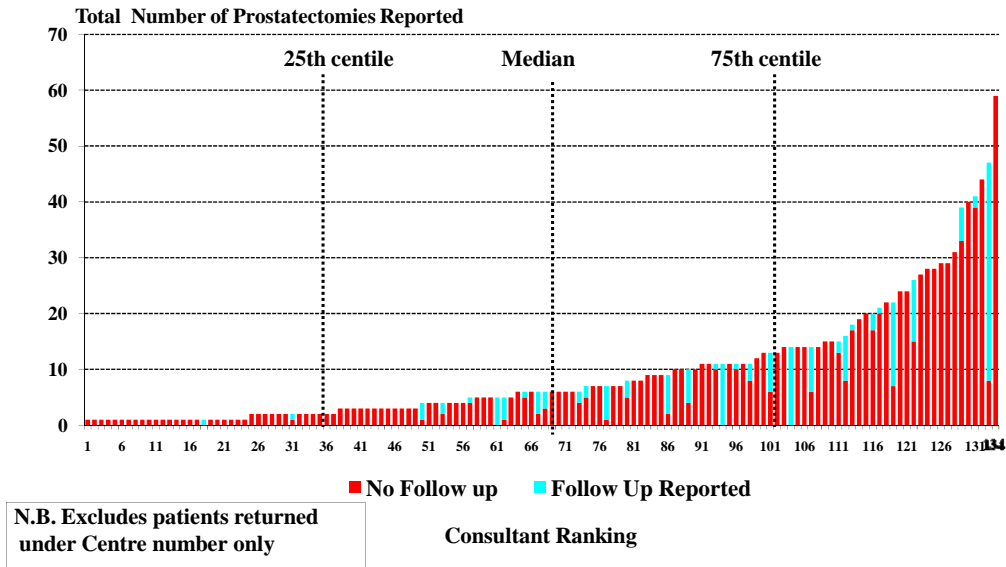
Median number of Follow-ups = 0; Range: 0 - 5

Time to latest follow-up:

Time from Operation to follow-up	N	% of total (181)
0 – 90 days	97	53.6
91 – 180 days	40	22.1
181 – 360 days	38	21.0
>=361 days	6	3.3

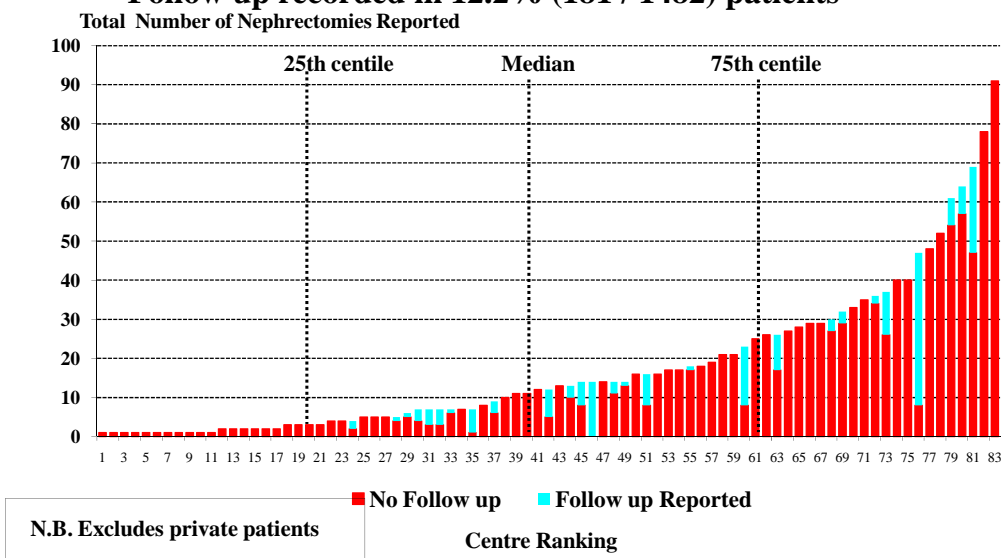
### Chart 69

**Total Number of Nephrectomies Reported per Consultant  
Including number with follow-ups  
Follow up recorded in 12.2% (181 / 1482) patients**



### Chart 70

**Total Number of Nephrectomies Reported per Centre  
Including number with follow ups  
Follow up recorded in 12.2% (181 / 1482) patients**





## Chart 71

**Nephrectomy - Current Status**  
**Follow up recorded in 12.2% (181 / 1482) patients**  
**Median time to latest Follow-up = 77 days; range 16 – 423 days**

	N	% of total (181)
Alive with no evidence of renal cancer	147	81.2
Alive with local recurrence of renal cancer	0	0.0
Alive with lymph node involvement	3	1.7
Alive with metastatic disease	15	8.3
Dead	3	1.7
Not recorded	13	7.2

Late complications were reported in 47/266 (17.7%) patients:

7 wound infection

3 wound hernia

12 renal

9 wound pain

21 other

## Chart 72

**Nephrectomy - Current Status**  
**Follow up recorded in 12.2% (181 / 1482) patients**  
**Median time to latest Follow-up = 77 days; range 16 – 423 days**

Time to follow up	N	% of total (181)	0 – 90 days		91-180 days		181 – 360 days		≥361 days	
			N	%	N	%	N	%	N	%
Alive with no evidence of renal cancer	147	81.2	73	73.7	34	82.9	35	97.2	5	62.5
Alive with local recurrence of renal cancer	0	-	0	-	0	-	0	-	0	-
Alive with lymph node involvement	3	1.7	3	3.0	1	2.4	0	0.0	2	25.0
Alive with metastatic disease	15	8.3	9	9.1	4	9.8	1	2.8	1	12.5
Dead	3	1.7	2	2.0	1	2.4	0	-	0	-
Not recorded	13	7.2	12	12.1	1	2.4	0	-	0	-

## D. Participating Hospital Centres

We are grateful to Consultants from the following Centres / Trusts who provided data for the analyses:

Aberdeen Royal Infirmary	Leighton Hospital
Addenbrooke's Hospital	Lincoln & Louth NHS Trust
Airedale General Hospital	Lister Hospital; Queen Elizabeth II
Alexandra Hospital	Hospital, Welwyn
Altnagelvin Area Hospital	Manchester Royal Infirmary
Arrowe Park Hospital	Mayday University Hospital
Barnet & Chase Farm Hospital	Milton Keynes General Hospital
Bedford Hospital	Morrison Hospital
Bradford Royal Infirmary	New Cross Hospital
United Bristol Health Care Trust	Noble's Isle of Man Hospital
Broomfield Hospital	Norfolk & Norwich Hospital
Buckinghamshire Hospitals NHS Trust	North Bristol NHS Trust (Southmead)
Castle Hill Hospital	North Devon District Hospital
Causeway Hospital	North Hampshire Hospital
Chesterfield & North Derbyshire	Northampton General Hospital
Churchill Hospital	Nottingham City Hospital
City Hospitals Sunderland NHS Foundation Trust	Pinderfields Hospital
Derby Hospitals NHS Foundation Trust	Portsmouth Hospitals NHS Trust
Derriford Hospital	Princess Alexandra Hospital, Harlow
Diana, Princess of Wales Hospital; Goole & District	Queen Elizabeth Hospital, B'ham
Hospital; Scunthorpe General Hospital	Queen's Hospital Burton
Doncaster & Bassetlaw Hospitals NHS Trust	Royal Alexandra Hospital (Paisley)
Dorset County Hospital	Royal Bournemouth Hospital
East Lancashire Hospitals NHS Trust	Royal Devon and Exeter Hospital
East Sussex Hospitals NHS Trust	Royal Glamorgan Hospital
Freeman Hospital	Royal Hallamshire Hospital
Gartnavel General Hospital	Royal Infirmary of Edinburgh
George Eliot Hospital	Royal Liverpool University Hospital
Glan Clwyd Hospital	Royal Marsden Hospital
Glasgow Royal Infirmary	Royal Preston Hospital
Gloucestershire Royal Hospital	Royal Shrewsbury Hospital
Golden Jubilee National Hospital	Royal Surrey County Hospital; Frimley
Great Western Hospital, Swindon	Park Hospital
Guy's & Thomas's Hospital	Royal United Hospital, Bath
Hairmyres Hospital	Royal West Sussex NHS Trust, St Richard's
Harrogate District Hospital	Hospital
Heart of England NHS Foundation Trust	Salford Royal NHS Foundation Trust
Hemel Hempstead General Hospital; Mount	Salisbury District Hospital
Vernon & Watford Hospitals	Sandwell District General Hospital
Hereford Hospitals NHS Trust	Southampton General Hospital
Homerton Hospital	Southend University Hospital NHS
Huddersfield Royal Infirmary	Foundation Trust
James Cook University Hospital	Southern General Hospital
James Paget University Hospital	Southport & Ormskirk NHS Trust
Kettering General Hospital	St James's University Hospital
Kidderminster General Hospital	St Mary's Hospital, IOW
King George Hospital	Stobhill Hospital
Leicester General Hospital	

Stracathro Hospital; Perth Royal Infirmary;  
Ninewells Hospital  
Taunton And Somerset Hospital  
Torbay Hospital  
University Hospital of North Durham  
University Hospital of North Stafford  
University Hospital of Wales  
Walsall Manor Hospital N H S Trust  
Walsgrave Hospital  
Warwick Hospital  
Watford General Hospital  
West Suffolk Hospital  
West Wales General Hospital  
Western General Hospital, Edinburgh  
Wexham Park Hospital  
Worcester Royal Infirmary  
Wrexham Maelor Hospital  
York District Hospital