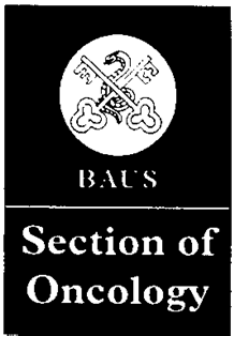


THE BRITISH ASSOCIATION OF UROLOGICAL SURGEONS

SECTION of ONCOLOGY

Analyses of Complex operations and the Newly diagnosed registry for Urological cancers

January 1st – 31st December 2010

June 2011

MEMBERS OF THE EXECUTIVE COMMITTEE

G Boustead	S Brewster	D Cahill	J Crew
A McNeill	T O'Brien	R A Persad	V Srinivasin

PRODUCED FOR BAUS SECTION OF ONCOLOGY

by

Sarah Fowler

Manager BAUS data & audit project

CONTENTS

INTRODUCTION

2011 will be a watershed year for the Section. Based on diminishing quantity and quality of data, the Executive took the decision earlier this year to stop the new tumour registry. All our efforts will now be concentrated on the complex operations databases, which have been updated and modified to try and simplify and facilitate data entry. The success or failure of this decision will depend heavily on the Section members embracing and engaging with the Web based system, and making data collection part of their daily practice. The new look and accessibility of the data and audit web page allows every BAUS member, irrespective of their Section membership, to engage in national audits of their choice. If we can encourage each section member to submit complete data on just one type of complex operative procedure per year, this will be a huge step in the right direction.

Included in this report is the last analysis on the new tumour registry. Numbers are understandably down on last year, since we stopped this dataset with only one month notice and returns were normally allowed until July. However the pattern of decreasing data quality is still apparent, justifying the decision to stop further collections. Members should be reminded that the database as it stands hold a wealth of information on approximately 300 000 cancers, and is still accessible for approved projects.

Also included is the latest report on the Complex Operations dataset from 2010. While it's interesting to note that we've had more data than 2009, this has been from fewer centres and the method of data returned (ie bulk upload or hand entry) makes interesting reading and proof that on-line data entry is the way to go and that the automated e-mail reminders work for follow-ups. Worryingly the median numbers of complex operations per centre and per consultant remain low, although this is likely to simply reflect a reporting bias. The challenge is clear. Unless we start using the Complex Operations dataset, we will lose it.

Greg Boustead

June 2011

AUDIT RESULTS SUMMARY -

Complex operations datasets (January 1st – December 31st 2010)

- 628 Cystectomies reported by 83 consultants from 45 centres
  - 73% males (450/613 recorded)
  - 60% of the operation data (378/628) & 99.4% (158/159) of the follow up data was individually entered by hand as oppose to being bulk imported
- 2225 Prostatectomies reported by 100 consultants from 59 centres
  - 55% of the operation data (1217/2225) & 97.3% (709/729) of the follow up data was individually entered by hand as oppose to being bulk imported
- 2118 Nephrectomies reported by 138 consultants from 73 centres
  - 57% males (1169/2055 recorded)
  - 71% of the operation data (1505/2118) & 97.6% (680/697) of the follow up data was individually entered by hand as oppose to being bulk imported

Newly Diagnosed Tumour Registry (January 1st – December 31st 2010)

- 241 Consultants from 72 Centres provided data on 16,006 newly presenting urological tumours.
- 0.2% (33/16,006) were from the private patients of 12 Consultants
- Range of Consultants per Centre = 1 - 10, (Median 4)
- Median number of tumours per Consultant = 28, Range 1 - 317
- Median number of tumours per Centre = 188, Range 1 – 1415
- 42.4% of the data was individually entered the rest was bulk imported

The following data was included:

- Patients for who the date of diagnosis fell within the time period. (01/01/2010 to 31/12/2010). 15,557 registrations (97.2%).
- Patients for whom the date of diagnosis was either not included or the patient was a tertiary referral, but the referral date fell within the study period. (01/01/2010 to 31/12/2010) 449 registrations (2.8%).

How were the data analysed?

All the data presented here are a summary of the data extracted from the web-based database on 15th April 2011 and relate to newly diagnosed tumours recorded or operations performed during the whole of 2010. Once extracted the data was transferred to an Access database for analysis at which time validation comprising mainly of

checks for duplicate entries and dates were carried out.

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 comprise single bars, with in addition the 25, 50, and 75 percentiles and are ranked from left to right in the ascending order of the data item being measured. Where percentages are included figures have been rounded up to one decimal point. Unless otherwise stated all analyses represent the 2010 datasets.

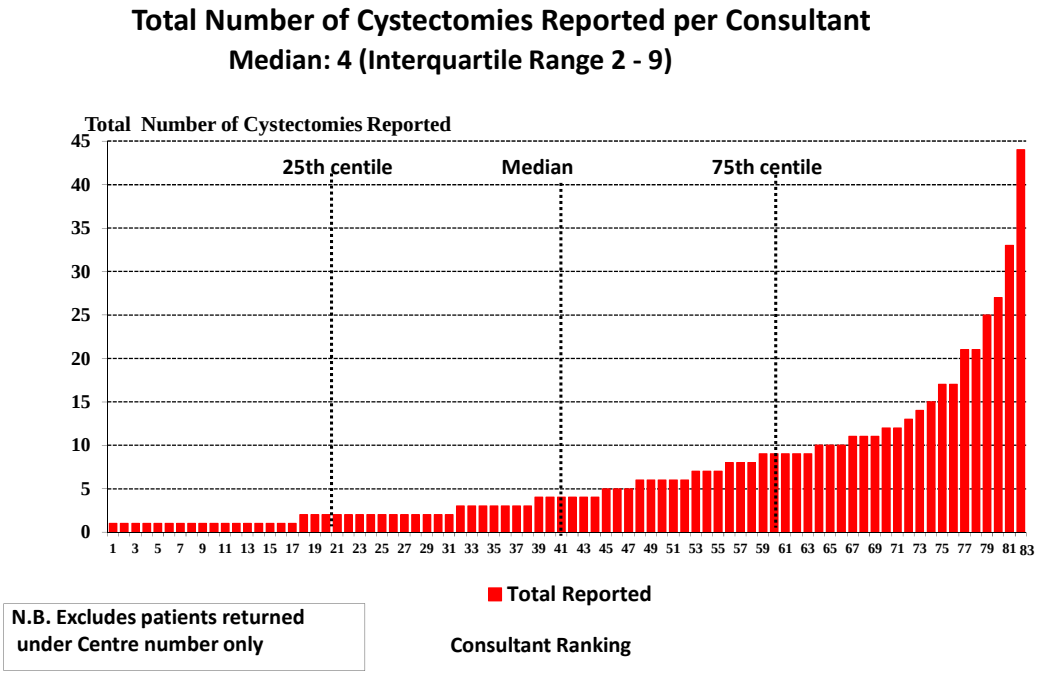
A personal ranking sheet for each consultant registering three or more tumours was issued individually to go with this chartbook.

Sarah Fowler June 2011

BAUS data & audit project Manager

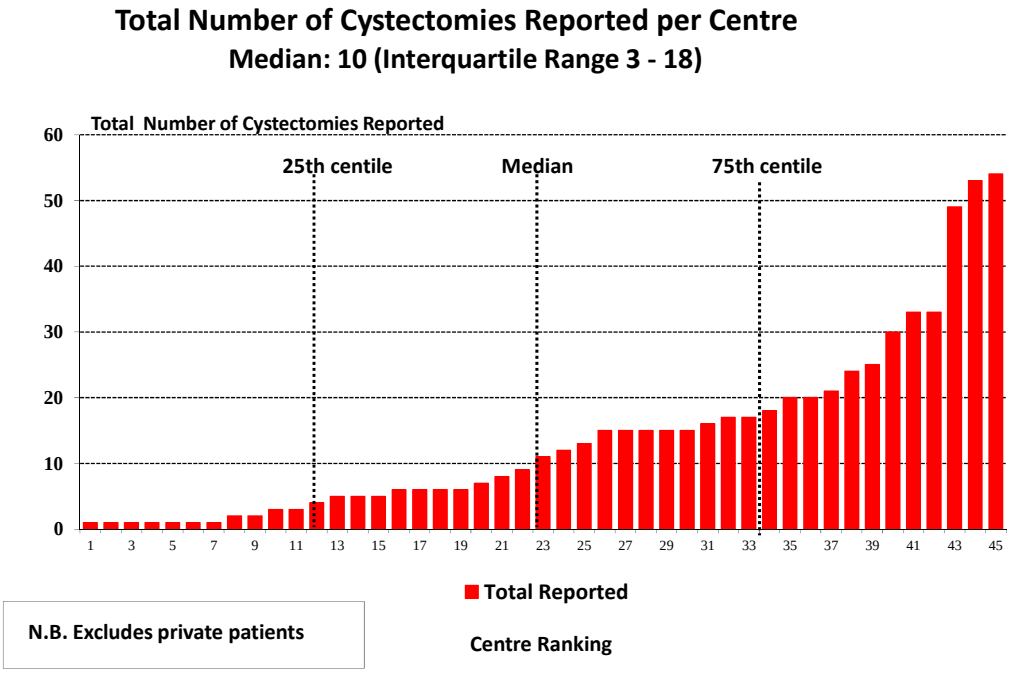
A. Cystectomies for malignant disease

Chart 1



N.B. Excludes patients returned under Centre number only

Chart 2



N.B. Excludes private patients

Chart 3

Indication for Cystectomy

Indication	Number & percentage of total (628)	
	N	%
Muscle invasive TCC	319	*50.8*
Uncontrolled superficial disease	71	*11.3*
Salvage after radiotherapy	31	*4.9*
Squamous cell Ca	30	*4.8*
Primary CIS	16	*2.5*
Gynaecological Ca	9	*1.4*
Primary adenocarcinoma	7	*1.1*
Sarcoma	3	*0.5*
Secondary adenocarcinoma	3	*0.5*
Other	46	*7.3*
Not Recorded	93	*14.8*

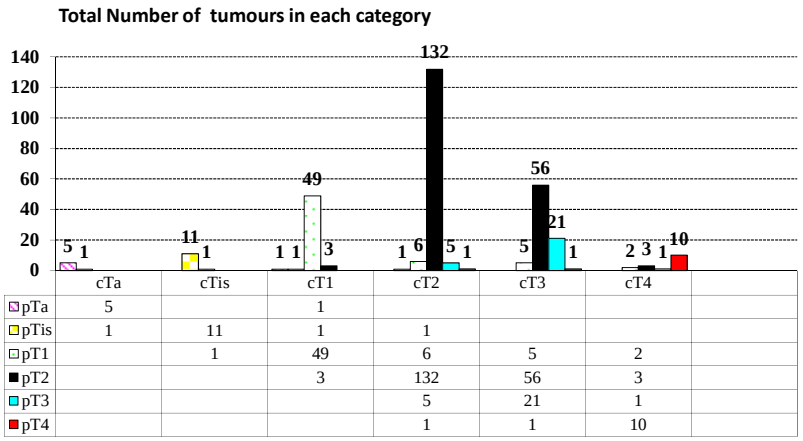
Chart 4

Cystectomy Pre-operative Clinical Staging
Staging could be estimated in 67.8% (426/628) cases

Known Staging	Total Known N	%
Stage 0a (Ta N0 M0)	9	*2.1*
Stage 0is (Tis N0 M0)	18	*4.2*
Stage I (T1 N0 M0)	64	*15.0*
Stage II (T2a, 2b N0 M0)	173	*40.6*
Stage III (T3a, 3b, 4a N0 M0)	105	*24.6*
Stage IV (T4b N0 M0 Any T N1, N2, N3 M0 Any T any N M1)	57 including 3 with metastases	*13.4* *0.7*

Chart 5

Cystectomy - Comparison of Pre-operative clinical & pathological Categories



	cTa	cTis	cT1	cT2	cT3	cT4
pTa	5		1			
pTis	1	11	1	1		
pT1		1	49	6	5	2
pT2			3	132	56	3
pT3				5	21	1
pT4				1	1	10

Chart 6

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

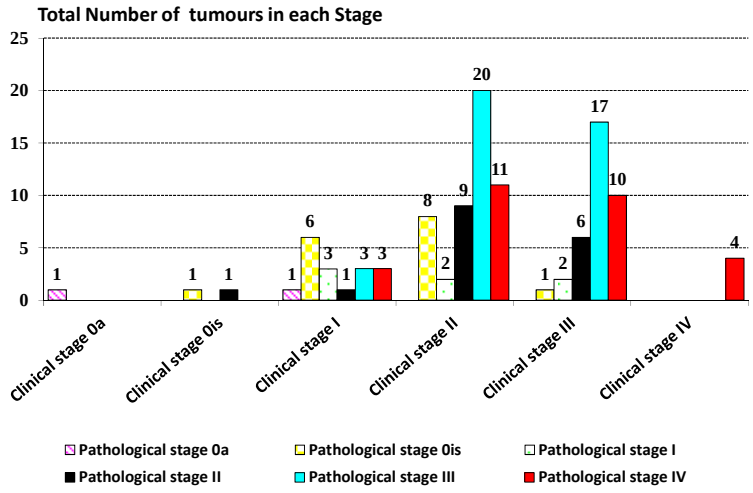


Chart 7

Cystectomy - Pre-operative Imaging

Total Numbers Reported with those as only Imaging method in ( )
Information recorded in 97% cases (611/628)

Imaging Method	N
CT Scan	346 (160)
MRI	126 (12)
Bone Scan	41 (0)
IVU	62 (0)
Others	97 (11)
None	208(208)

Chart 8

Cystectomy - Pre-operative Serum Creatinine

Serum Creatinine Level µmols/l	N	*% of total (628)*
0 – 120 µmols/l	497	*79.1*
121 - 200 µmols/l	78	*12.4*
> 200 µmols/l	9	*1.4*
Not recorded	44	*7.0*

Chart 9

Cystectomy - Other Pre-operative findings

	N	*% of total reporting*
Pre operative Radiotherapy	**42/464**	***9.1***
Pre operative Neoadjuvant Chemotherapy	**119/482**	***24.7***
Synchronous Upper tract disease	**35/602**	***5.8***

Chart 10

Cystectomy - Status Upper Tracts

Status	**Number & percentage of total reported (628)**	
	N	**%**
Normal	**439**	***69.9***
Tumour	**6**	***1.0***
Hydronephrosis – left	**42**	***6.7***
Hydronephrosis – right	**49**	***7.8***
Hydronephosis – bilateral	**34**	***5.4***
Non – functioning kidney	**6**	***1.0***
Other	**15**	***2.4***
Not recorded	**37**	***5.9***

Chart 11

Cystectomy Pre-operative Potency

	N	*% of total (628)*
Impotent	**97**	***15.4***
Partially potent	**59**	***9.4***
Fully potent	**139**	***22.1***
Potency not recorded	**333**	***53.0***

Chart 12

Cystectomy Pre-operative Continence

	N	*% of total (628)*
Complete	**371**	***59.1***
Minor stress leakage	**21**	***3.3***
1 pad per day	**4**	***0.6***
> 1 pad per day	**18**	***2.9***
Appliance	**18**	***2.9***
Continence not recorded	**196**	***31.2***

Chart 13

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

	Total Number	*% of total (628)*	Supervised training operation	*%*
Consultant	**524**	***83.4***	**192/524**	***36.6***
Specialist Registrar	**27**	***4.3***	**27/27**	***100***
Other	**55**	***8.8***	**0/55**	***0***
Surgeon not recorded	**22**	***3.5***	**-**	**-**

Chart 14

Cystectomy - Diversion procedure
48 laparoscopic procedures were reported*
102 combined synchronous urethrectomies
24 combined synchronous nephroureterectomies

	N	*% of total (628)*
Ileal conduit	**469**	***74.7***
Orthotopic	**45**	***7.2***
Rectal diversion	**2**	***0.3***
Continent cutaneous diversion	**3**	***0.5***
Other	**13**	***2.1***
Not recorded	**96**	***15.3***

66.7% (30/45) of the orthotopics were Studer
* Includes 7 performed robotically (da Vinci)

Chart 15

Cystectomy Lymph Node Dissection

	N	*% of total (628)*
None	**157**	***25.0***
Palpable only	**37**	***5.9***
Below bifurcation of common iliac	**256**	***40.8***
Extended above bifurcation of common iliac	**145**	***23.1***
Not recorded	**33**	***5.3***

Chart 16

Cystectomies

- **Median duration of operation:**

- **All patients = 330 mins; Range: 60 – 750; (471 patients)**
- **Patients having LND = 300 mins; Range: 120 – 750; (381 patients)**
  Patients with no LND = 240 mins; Range: 60 – 600; (90 patients)

- **Median number of units of blood transfused = 0**
  Range: 0 - 12
  (reported in 84.0% (529) patients)

- **Median measured blood loss = 800 mls**
  Range: 20 – 6,000
  (reported in 61.3% (385) patients)

- **Median post-operative stay = 13 days (excluding deaths)**
  Range: 1 - 260
  (reported in 61.8% (388) patients)

Chart 17

Cystectomies Complications

		N	%
Intra-operative complications:		44/588	7.5
	Bleeding	15/588	2.6
	Rectal Injury	4/588	0.7
	Other / NR	25/588	4.2
Post-operative complications:		121/550	22.0
	Infections/ Septicaemia	29/550	5.3
	Prolonged Ileus	13/550	2.4
	Wound dehiscence	12/550	2.2
	Leaks	4/550	0.7
	Other / NR	63/550	11.5

Chart 18

Cystectomy - Significance of Complications
Overall morbidity Rate = 27.5% (173/628)
30 day mortality Rate = 0.32%(2/628)

	Intra-operative		Post-operative	
	N	%	N	%
No action required	11	25.0	13	10.7
Contributed to death	1	2.3	3	2.5
Delayed discharge	7	15.9	46	38.0
Required medical treatment	2	4.5	32	26.4
Required surgery	4	9.1	19	15.7
Not recorded	19	43.2	8	6.6

Chart 19

Cystectomy - Operative Histology reported in 22.5% (141/628) cases

Histology	Number & percentage of total known (141)	
	N	%
No cancer	18	12.8
Muscle invasive TCC	88	62.4
SCC	5	3.55
Primary CIS	15	10.6
Sarcoma	0	0
Gynaecological ca	3	2.13
Primary adenocarcinoma	1	0.71
Secondary adenocarcinoma	1	0.71
Other	10	7.09

Chart 20

Cystectomy Follow ups

Follow up recorded in 21% (132 / 628) patients

Median time to latest Follow-up = 68 days; range 14 – 357 days

Median number of Follow-ups (where reported) = 1; Range: 1 - 3

Time to latest follow-up:

Time from Operation to follow-up	N	% of total (132)
0 – 90 days	88	66.7
91 – 180 days	30	22.7
181 – 360 days	14	10.6
>=361 days	0	-

Chart 21

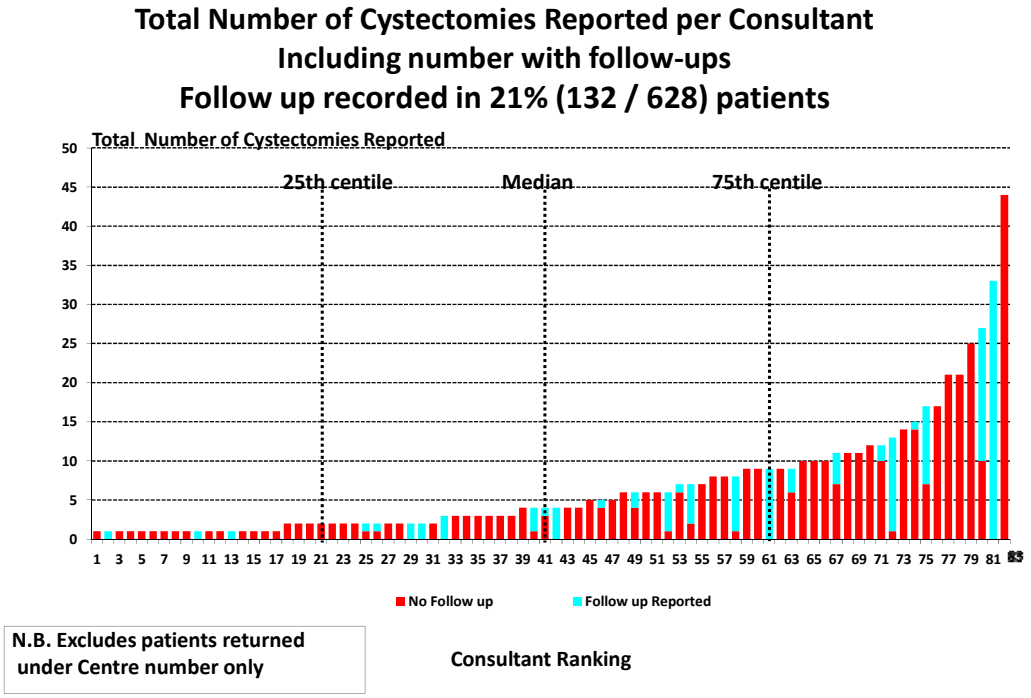


Chart 22

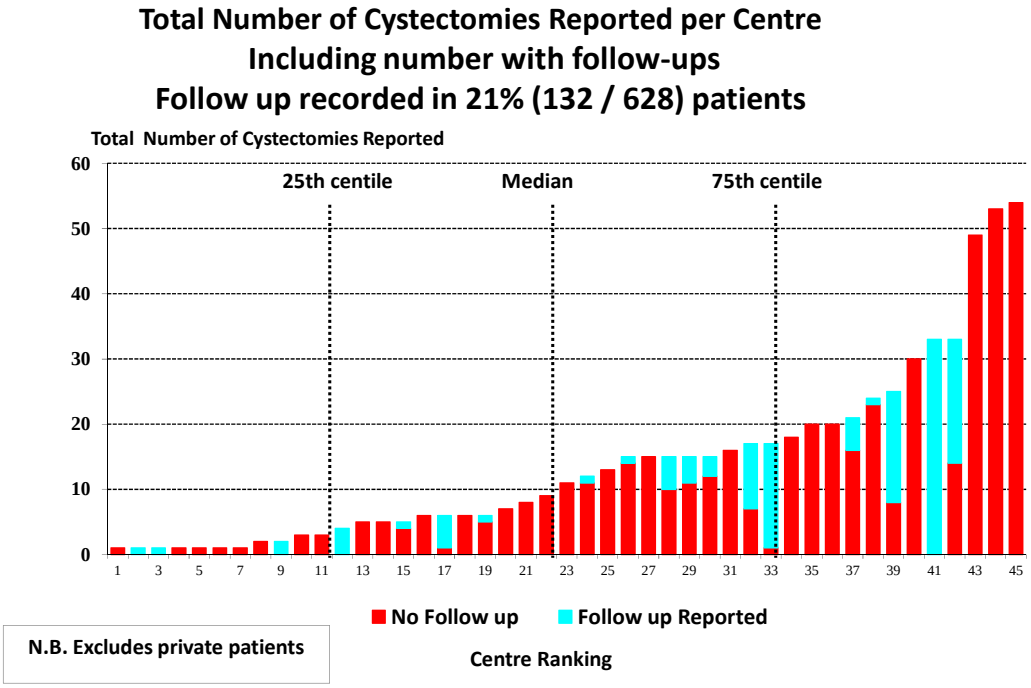


Chart 23

Cystectomy - Current Status
Follow up recorded in 21% (132 / 628) patients
Median time to latest Follow-up = 68 days; range 14 – 357 days

	N	*% of total (132)*
Alive with no evidence of bladder cancer	**114**	***86.4***
Alive with local recurrence of bladder cancer	**1**	***0.76***
Alive with lymph node involvement	**6**	***4.55***
Alive with metastatic disease	**3**	***2.27***
Dead	**2**	***1.52***
Not recorded	**6**	***4.55***

Late complications were reported in 24/132 (18.2%) patients

Chart 24

Cystectomy - Current Status
Follow up recorded in 21% (132 / 628) patients
Median time to latest Follow-up = 68 days; range 14 – 357 days

Time to follow up	**N**	***% of total (132)***	**0 – 90 days**		**91-180 days**		**181 – 360 days**	
			N	***%***	**N**	***%***	**N**	***%***
Alive with no evidence of bladder cancer	**114**	***86.4***	**75**	***85.2***	**26**	***89.7***	**13**	***86.7***
Alive with local recurrence of bladder cancer	**1**	***0.76***	**1**	***1.14***				
Alive with lymph node involvement by bladder ca	**6**	***4.55***	**5**	***5.68***	**1**	***3.45***		
Alive with metastatic disease	**3**	***2.27***	**2**	***2.27***	**1**	***3.45***		
Dead	**2**	***1.52***	**2**	***2.27***				
Not recorded	**6**	***4.55***	**3**	***3.41***	**1**	***3.45***	**2**	***13.3***

B. Radical Prostatectomies

Chart 25

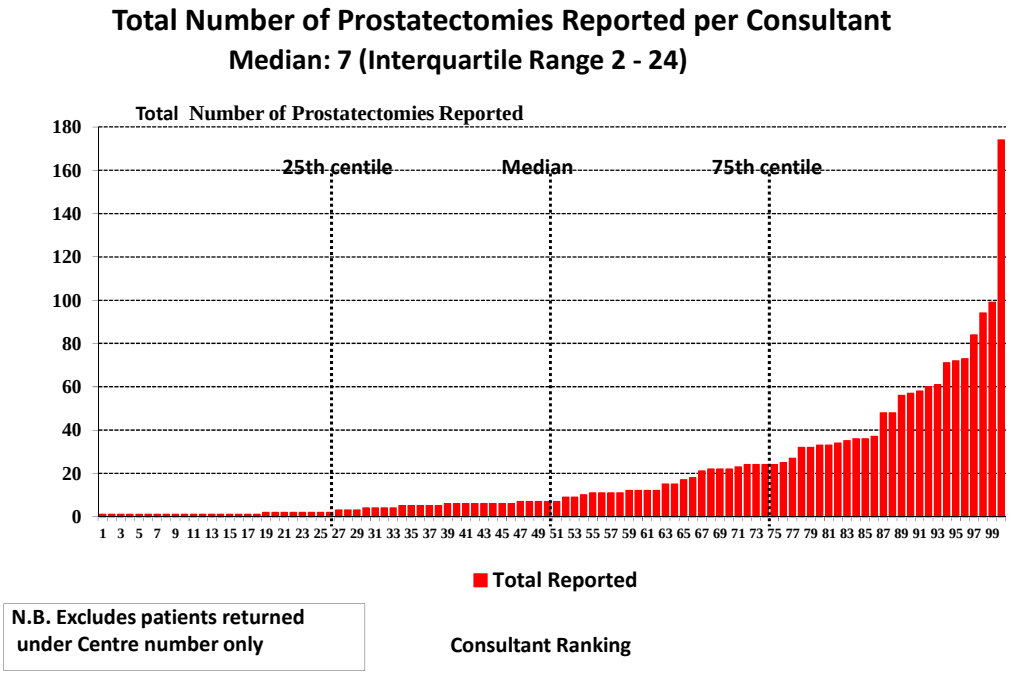


Chart 26

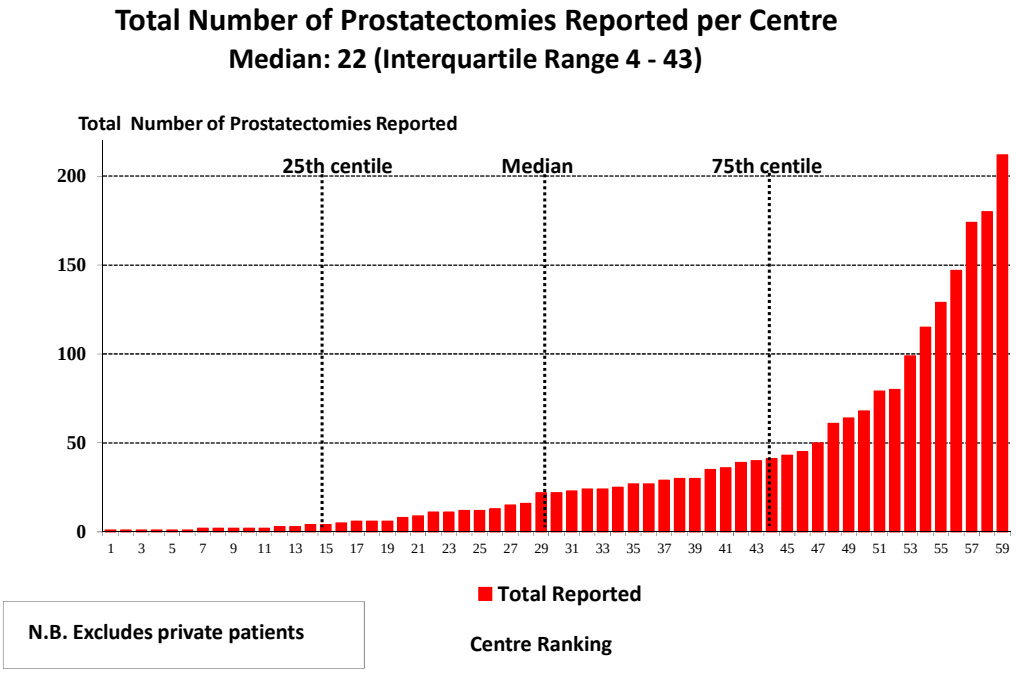
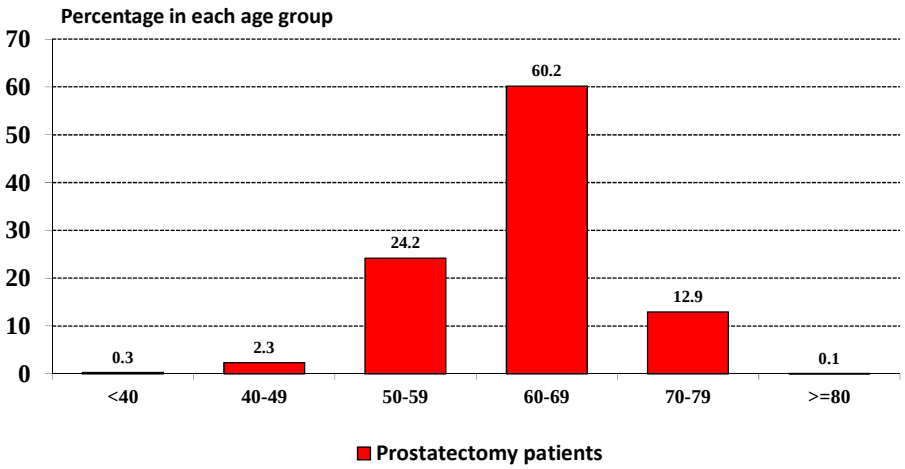


Chart 27

Percentage Age Distribution - Prostatectomies

Median : 60 Years; Range 10 -100 (n= 2186*)



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 (2225)*
Via Screening or Case Finding	992	*44.6*
LUTS	434	*19.5*
Other	549	*24.7*
Not recorded	250	*11.2*

Other presentation was only recorded in 8.6% (47/549) cases

4.7% (98/2099) were reported as having had a previous TURP

Chart 29

Prostatectomy Pre-operative Clinical Staging
Staging could be estimated in 72% (1602/2225) cases

Known Staging	Total Known N	 *%*
Stage I (T1a N0 M0)	5	*0.3*
Stage II (T1b, 1c, 1, 2 N0 M0)	T1,1a,1b – 50 T1c – 694 T2 – 725	*3.1* *43.3* *45.3*
Stage III (T3 N0 M0)	113	*7.1*
Stage IV (T4 N0 M0 Any T N1 M0 Any T any N M1)	15	*0.9*

Chart 30

Prostatectomies
Comparison of clinical & pathological staging

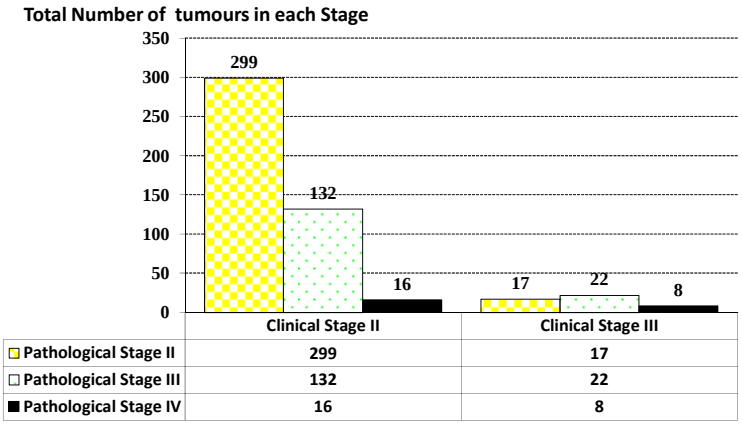


Chart 31

Staging of Prostate Tumours by PSA

Numbers falling in each category
Pre-operative PSA was recorded in 83.4% patients (1856/2225)
Staging could be estimated in 83.6% (1551/1856) of these cases

Known Clinical Staging	Total Patients	PSA 0-5 N	%	PSA 6-10 N	%	PSA 11-20 N	%	PSA 21-50 N	%	PSA > 50 N	%
Stage I T1a N0 M0	5	2	*0.7*	3	*0.4*	0		0		0	
Stage II T1b, 1c, 1, 2, N0 M0	1422	273	*95.8*	737	*91.9*	362	*90.3*	48	*78.7*	1	*100.0*
Stage III T3 N0 M0	110	8	*2.8*	53	*6.6*	36	*9.0*	13	*21.3*	0	
Stage IV (T4 N0 M0 Any T N1 M0 Any T any N M1)	14	2	*0.7*	9	*1.1*	3	*0.7*	0		0	
Totals	1551	270		802		401		61		1	

Chart 32

Gleason Sum Scores by Age Group - Prostatectomies

Number falling into each category
Gleason scores were recorded in 86.2% (1919/2225)
Age could be recorded in 99.5% (1884/1919) of these

Age Group	Total Patients	Gleason sum 2 – 4 N	%	Gleason sum 5 – 6 N	%	Gleason sum 7 N	%	Gleason sum 8 – 10 N	%
< 60	509	0	-	240	*47.2*	231	*45.4*	38	*7.5*
60 – 64	540	0	-	241	*44.6*	261	*48.3*	38	*7.0*
65 – 69	593	0	-	227	*38.3*	319	*53.8*	47	*7.9*
70 – 74	228	0	-	78	*34.2*	137	*60.1*	13	*5.7*
75 – 79	13	0	-	4	*30.8*	8	*61.5*	1	*7.7*
>=80	1	0	-	0	-	1	*100.0*	0	-
Totals	1884	0	-	790	*42.0*	957	50.8	137	7.27

Chart 33

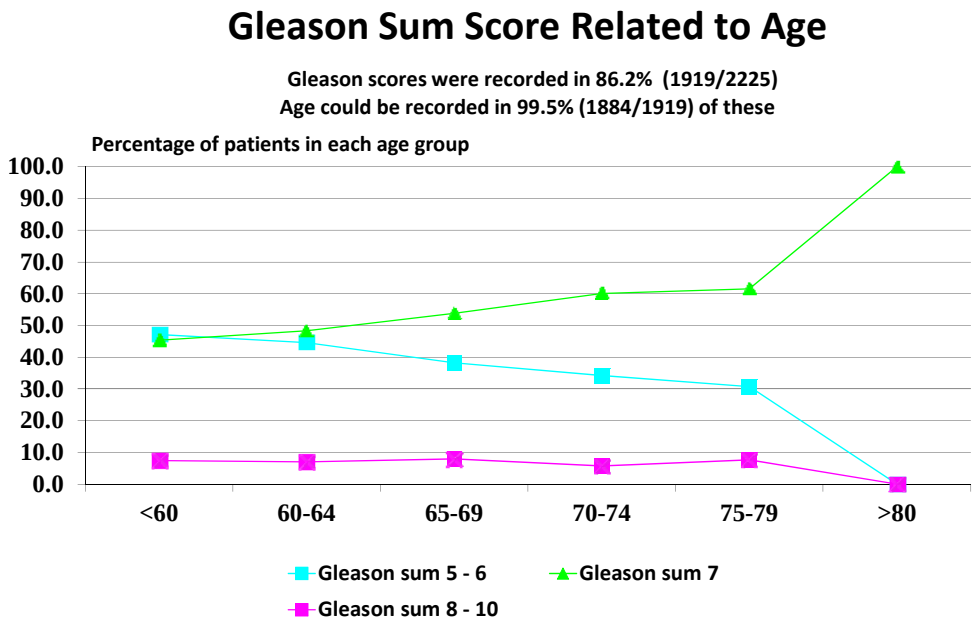


Chart 34

Prostatectomy Pre-operative Potency

	N	*% of total (2225)*
Impotent	254	*11.4*
Partially potent	340	*15.3*
Fully potent	846	*38.0*
Potency not recorded	785	*35.3*

Chart 35

Prostatectomy Pre-operative Continence

	N	*% of total (2225)*
Complete	**1505**	***67.6***
Minor stress leakage	**35**	***1.6***
1 pad per day	**0**	**-**
> 1 pad per day	**4**	***0.2***
Appliance	**2**	***0.1***
Continence not recorded	**679**	***30.5***

Chart 36

Prostatectomy Grade of Main Operating Surgeon

with numbers & percentage reported as being a supervised training operation

	Total Number	*% of total (2225)*	Supervised training operation	*%*
Consultant	**1839**	***82.7***	**320/1698**	***18.8***
Specialist Registrar	**66**	***3.0***	**65/66**	***98.5***
Other	**238**	***10.7***	**23/238**	***9.7***
Surgeon not recorded	**82**	***3.7***	**-**	**-**

Chart 37

Prostatectomy - Procedure
Nerve sparing

Nerve Sparing	N	*% of total (2225)*
Bilateral	756	*34.0*
Unilateral	345	*15.5*
None	980	*44.0*
Not recorded	144	*6.5*

Chart 38

Prostatectomy Procedure - Approach

	N	*% of total (2225)*
Retropubic	1294	*58.2*
Perineal	15	*0.7*
Other	266	*12.0*
Not recorded	650	*29.2*

Chart 39

Prostatectomy Procedure – Laparoscopic
Known Conversion rate = 1.6% (27/1657)*

Laparoscopic	N	*% of total (2225)*
Yes	1421	*63.9*
No	736	*33.1*
Not recorded	68	*3.1*

***Conversion reasons were included in 24/27**

349 (15.7%) procedures were performed robotically (da Vinci)

Chart 40

Prostatectomies

- **36.3% had Lymph Node dissection (787/2171 patients)**
- **Median duration of operation:**
- **All patients = 173 mins; Range: 45 - 480; (1735 patients)**
- **Patients having LND = 170 mins; Range: 45 - 480; (715 patients)**
  Patients with no LND = 180 mins; Range: 60 – 450; (1005 patients)
- **Median number of units of blood transfused = 0**
  Range: 0 - 6
  (reported in 96.6% (2150) patients)
- **Median measured blood loss = 200 mls**
  Range: 0 – 66,000
  (reported in 94.7% (2107) patients)
- **Median post-operative stay = 3 days (excluding deaths)**
  Range: 0 - 160
  (reported in 53.8% (1117) patients)

Chart 41

Prostatectomies Complications

		N	%
Intra-operative complications:		95/2225	4.3
	Bleeding	11/2225	0.5
	Rectal Injury	8/2225	0.4
	Difficult access/procedure	22/2225	1.0
	Other / NR	54/2225	2.4
Post-operative complications:		132/2225	5.9
	Infections	13/2225	0.6
	Ileus	4/2225	0.2
	Leaks	3/2225	0.1
	Other / NR	112/2225	5.0

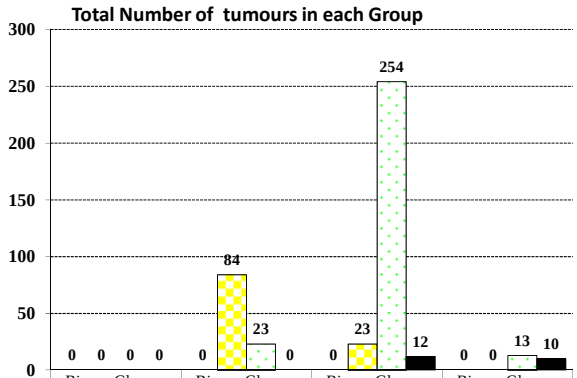
Chart 42

Prostatectomy - Significance of Complications
Overall morbidity Rate = 9.4% (210/2225)
30 day mortality Rate = 0% (0/2225)

	Intra-operative		Post-operative	
	N	%	N	%)
No action required	14	10.6	16	12.2
Contributed to death	0	0.0	0	0.0
Delayed discharge	43	32.6	9	6.9
Required medical treatment	46	34.8	6	4.6
Required surgery	11	8.3	4	3.1
Not recorded	18	13.6	96	73.3

Chart 43

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



	Biopsy Gleason sum 2-4	Biopsy Gleason sum 5 - 6	Biopsy Gleason sum 7	Biopsy Gleason sum 8 - 10
Surgical Gleason sum 2 - 4	0	0	0	0
Surgical Gleason sum 5 - 6	0	84	23	0
Surgical Gleason sum 7	0	23	254	13
Surgical Gleason sum 8 - 10	0	0	12	10

Chart 44

Prostatectomy Pathology

	N	*% of total known*
Known Positive Lymph Nodes	**22/378**	***5.8***
Known Seminal Vesical Involvement	**34/500**	***6.8***
Known Positive Margin rate	**157/509**	***30.8***

Chart 45

Prostatectomy Follow ups

Follow up recorded in 30.7% (684 / 2225) patients

Median time to latest Follow-up = 82 days; range 5 – 425 days

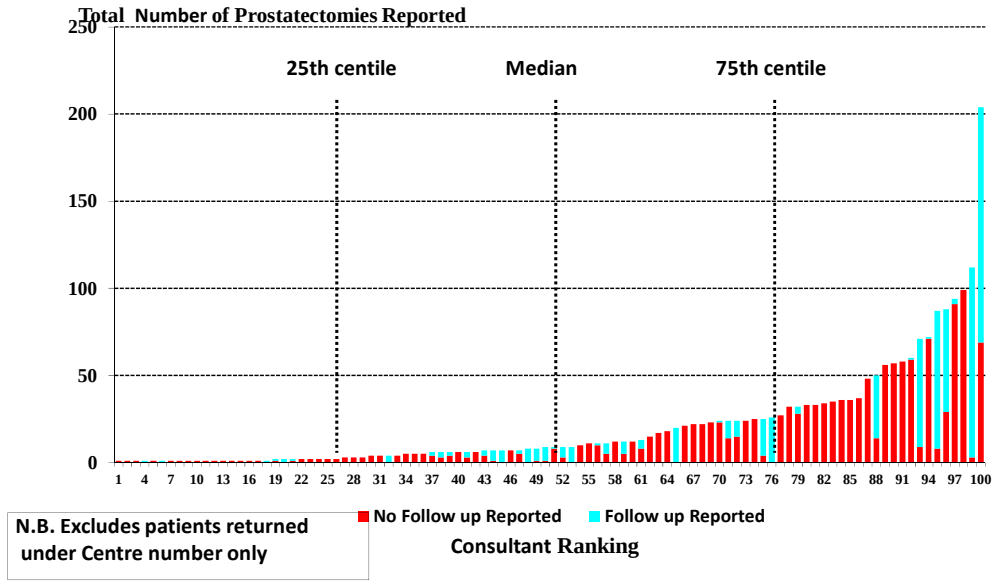
Median number of Follow-ups = 0; Range: 0 - 3

Time to latest follow-up:

Time from Operation to follow-up	N	*% of total (682)*
0 – 90 days	394	*57.8*
91 – 180 days	190	*27.9*
181 – 360 days	89	*13*
>=361 days	9	*1.32*

Chart 46

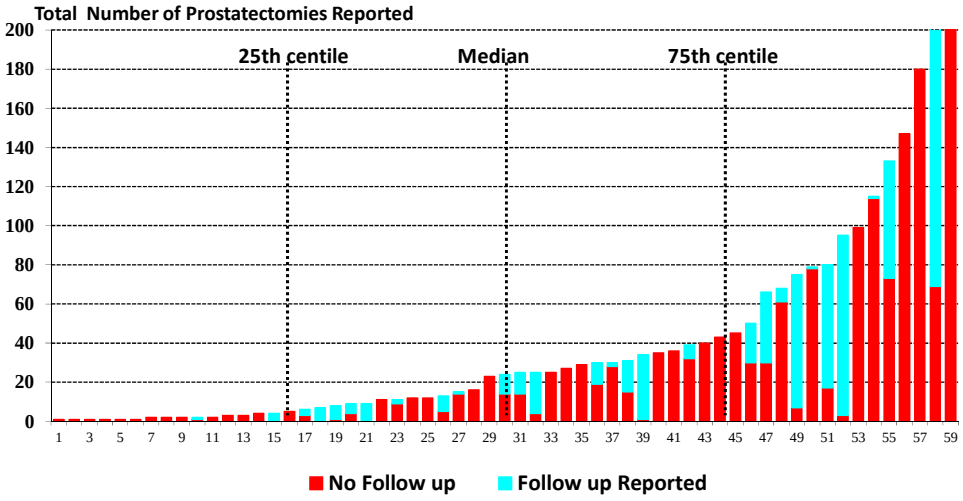
Total Number of Prostatectomies Reported per Consultant
Including number with follow-ups
Follow up recorded in 30.7% (684 / 2225) patients



N.B. Excludes patients returned under Centre number only

Chart 47

Total Number of Prostatectomies Reported per Centre
Including number with follow-ups
Follow up recorded in 30.7% (684 / 2225) patients



N.B. Excludes private patients

Chart 48

Prostatectomy - Current Status
Follow up recorded in 30.7% (684 / 2225) patients
Median time to latest Follow-up = 82 days; range 5 – 425 days

	N	*% of total (684)*
Alive with no evidence of prostate cancer	**622**	***90.9***
Alive with local recurrence of prostate cancer	**10**	***1.46***
Alive with lymph node involvement	**12**	***1.75***
Alive with metastatic disease	**3**	***0.44***
Dead	**0**	***0***
Not recorded	**37**	***5.41***

Late complications were reported in 19.1% (131/684) patients:
7 Anastamotic strictures
6 DVT
5 Urethral stricture
4 UTI
3 Hernia

Chart 49

Prostatectomy - Current Status

Follow up recorded in 30.7% (684 / 2225) patients

Median time to latest Follow-up = 82 days; range 5 – 425 days

Time to follow up	N	*% of total (684)*	0 – 90 days N	*%*	91-180 days N	*%*	181 – 360 days N	*%*	>=361 days N	*%*
Alive with no evidence of prostate cancer	622	*90.9*	349	*89.9*	180	*91.4*	84	*93.3*	9	*100*
Alive with local recurrence of prostate cancer	10	*1.5*	3	*0.8*	5	*2.5*	2	*2.2*	0	-
Alive with lymph node involvement	12	*1.7*	11	*2.8*	1	*0.5*	0	*0*	0	-
Alive with metastatic disease	3	*0.4*	0	*0*	2	*1.0*	1	*1.1*	0	-
Dead	0	-	0	-	0	-	0	-	0	-
Not recorded	37	*5.4*	25	*6.4*	9	*4.6*	3	*3.3*	0	-

C. Nephrectomies (Including procedures for both malignancies and non-malignancies)

Chart 50

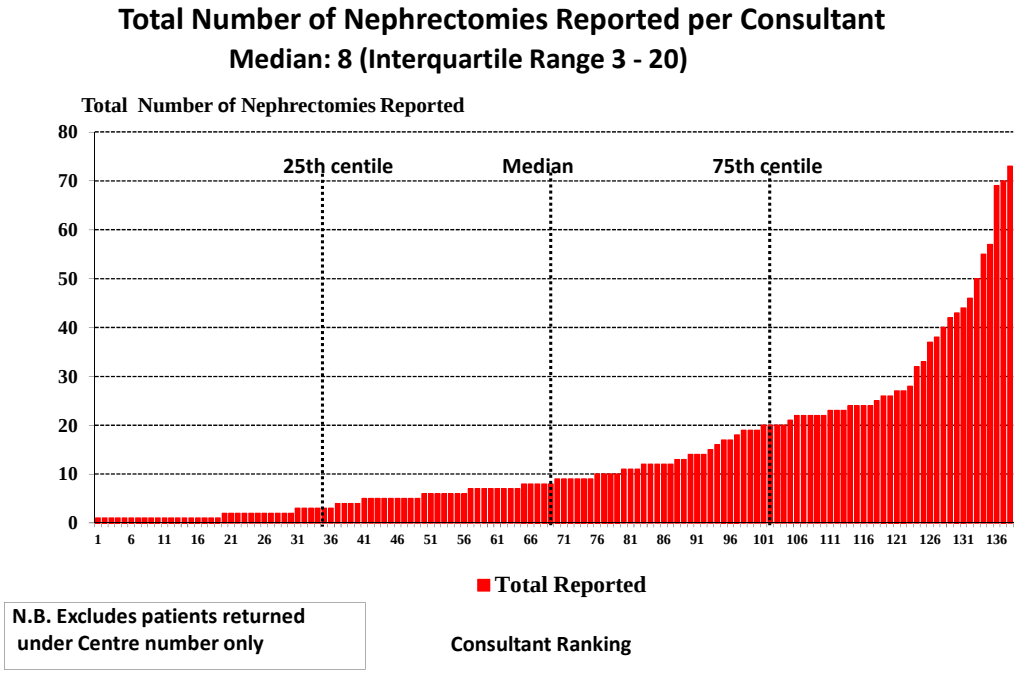


Chart 51

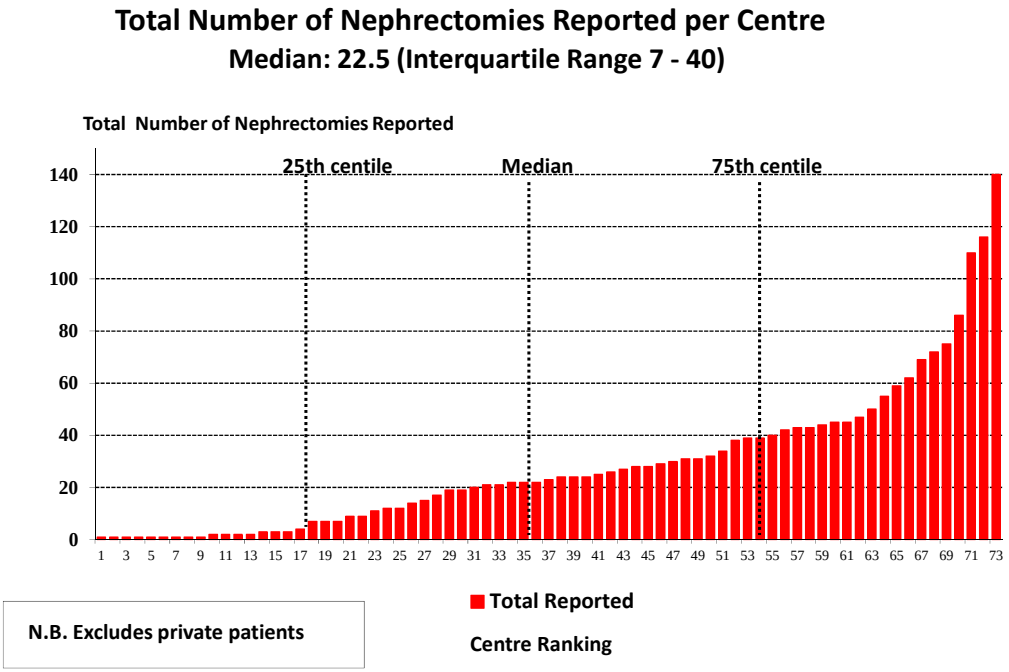


Chart 52

Nephrectomy - Pre-operative presentation

	N	*% of total (2118)*
Incidental finding with no symptoms	680	*32.1*
Haematuria	479	*22.6*
Other:	765	*36.1*
Weight Loss	24	*1.1*
Other Ca	19	*0.9*
Pain	198	*9.3*
UTI	61	*2.92*
Other/Not recorded	463	*21.9*
Not recorded	194	*9.2*

Chart 53

Nephrectomy - Diagnosis

		N	*% of total (2118)*
Malignant	Renal Cell Cancer	1196	*56.5*
	TCC	266	*12.6*
	Other Cancer / Not recorded	320	*15.1*
Non-Malignant	Non-functioning kidney	141	*6.7*
	Stone disease	45	*2.1*
	Other / Not recorded	70	*3.3*
Not recorded		80	*3.8*

Chart 54

Nephrectomies – Haematology at Presentation

	N	Median	Range
Hb (g/L)	1451	14	6 – 183
Total WBC (* 10^9 / L)	1293	8	3 – 124
Neutrophils (* 10^9 / L)	1107	5	2 – 44
Lymphocytes (* 10^9 / L)	749	2	2 – 300
Platelets (* 10^9 / L)	1260	260	2 - 1030

Chart 55

Nephrectomy - Pre-operative Serum Creatinine

Serum Creatinine Level µmols/l	N	*% of total (2118)*
0 – 120 µmols/l	1554	*73.4*
121 - 200 µmols/l	187	*8.8*
> 200 µmols/l	42	*2.0*
Not recorded	335	*15.8*

Chart 56

Nephrectomy Pre-operative Clinical Staging
Staging could be estimated in 73.7% (1314/1782*) cases

Known Staging	Total Known N	 %
Stage Oa (Ta N0 M0)	37	*2.8*
Stage Ois (Tis N0 M0)	2	*0.2*
Stage I (T1 N0 M0)	666	*50.7*
Stage II (T2 N0 M0)	257	*19.6*
Stage III (T1, T2, T3 N0, N1 M0)	186	*14.2*
Stage IV (T4 N0, N1 M0 Any T N2 M0 Any T any N M1)	166 including 81 with metastases	*12.6* *6.2*

* Malignancies only

Chart 57

Nephrectomies
Comparison of clinical & pathological staging

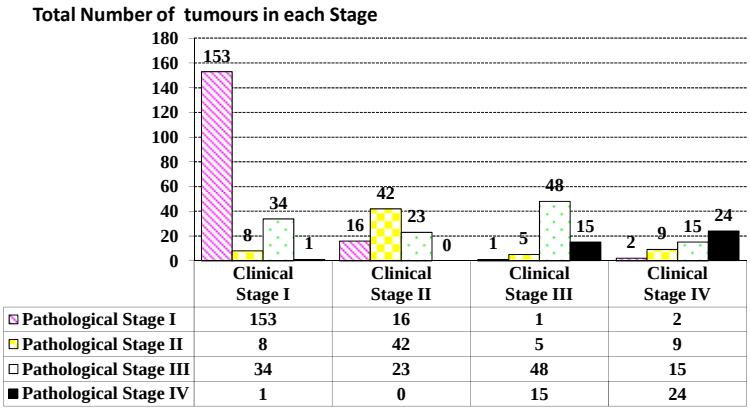


Chart 58

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

	Total Number	*% of total (2118)*	Supervised training operation	*%*
Consultant	**1567**	***74.0***	**398/1567**	***25.4***
Specialist Registrar	**261**	***12.3***	**250/261**	***95.8***
Other / Not recorded	**290**	***13.7***	**-**	**-**

Chart 59

Nephrectomy – Procedure

	Malignancies		Non-Malignancies	
	N	*% of total (1782)*	N	*% of total (256)*
Radical Nephrectomy	**1081**	***60.7***	**54**	***21.1***
Partial Nephrectomy	**224**	***12.6***	**16**	***6.3***
Simple Nephrectomy	**114**	***6.4***	**160**	***62.5***
Nephroureterectomy	**302**	***16.9***	**12**	***4.7***
Heminephrectomy	**0**	***0.0***	**2**	***0.8***
Other	**44**	***2.5***	**8**	***3.1***
Not Recorded	**17**	***1.0***	**4**	***1.6***

The vena cava was reported as being explored in 47 cases:

- **6 – level 1; 11 – level 2; 6 – level 3; 4 – level 4 and 19 not recorded**
- **6 – liver mobilisation; 2 cardiopulmonary bypass; 2 circulatory arrest; 24 complete excision from IVC**

Chart 60

Nephrectomies – Known Surgical Approach
Known Laparoscopic Conversion rate = 7.3% (91/1249)*

	Malignancies		Non-Malignancies	
Approach	**N**	***% of total (1493)***	**N**	***% of total (253)***
Open	**484**	***32.4***	**40**	***15.8***
Laparoscopic	**1009**	***67.6***	**213**	***84.2***

*** <u>Conversion reasons</u>**

- **25 due to bleeding**
- **37 due to failure to progress**
- **29 other / not recorded**

Chart 61

Nephrectomy Approach by Pre-operative Clinical Staging
Staging could be estimated in 73.7% (1314/1782*) cases

Known Staging	Total N	Open N	*%*	Laparoscopic N	*%*
Stage Oa (Ta N0 M0)	36	4	*0.9*	32	*3.8*
Stage Ois (Tis N0 M0)	2	0	*0.0*	2	*0.2*
Stage I (T1 N0 M0)	649	169	*39.7*	480	*56.5*
Stage II (T2 N0 M0)	251	95	*22.3*	156	*18.4*
Stage III (T1, T2, T3 N0, N1 M0)	175	89	*20.9*	86	*10.1*
Stage IV (T4 N0, N1 M0 Any T N2 M0 Any T any N M1)	163	69	*16.2*	94	*11.1*

* Malignancies only

Chart 62

Nephrectomies – Procedure

6.4% (135/2118) had Lymph Node dissection*

	Procedure	N	Median	Range
Duration of Operation (mins)	Open Radical Nephrectomy	258	150	30 – 438
	Lap Radical Nephrectomy	668	150	40 - 495
	Open Nephroureterectomy	30	161	90 – 360
	Lap Nephroureterectomy	192	180	60 – 390
	Open Partial/Simple Nephrectomy	131	130	60 – 270
	Lap Partial/Simple Nephrectomy	223	150	45 – 360
Post –op Length of Stay (days)	Open Radical Nephrectomy	264	7	2 – 179
	Lap Radical Nephrectomy	658	4	0 – 93
	Open Nephroureterectomy	37	9	5 – 56
	Lap Nephroureterectomy	166	6	1 – 82
	Open Partial/Simple Nephrectomy	150	6	1 – 42
	Lap Partial/Simple Nephrectomy	193	3	0 - 39

* All recorded in malignant diagnoses

Chart 63

Nephrectomies – Procedure

Measured Blood Loss and Transfusion

	Procedure	N	Median	Range
Units of Blood Transfused	Open Radical Nephrectomy	251	0	0 – 20
	Lap Radical Nephrectomy	674	0	0 – 12
	Open Nephroureterectomy	28	0	0 – 7
	Lap Nephroureterectomy	203	0	0 – 7
	Open Partial/Simple Nephrectomy	150	0	0 – 32
	Lap Partial/Simple Nephrectomy	229	0	0 – 4
Measured Blood Loss (mls)	Open Radical Nephrectomy	240	400	0 – 7,000
	Lap Radical Nephrectomy	669	100	0 – 4,000
	Open Nephroureterectomy	30	400	0 – 4,000
	Lap Nephroureterectomy	200	100	0 – 2,250
	Open Partial/Simple Nephrectomy	145	150	0 – 2,500
	Lap Partial/Simple Nephrectomy	214	100	0 – 1,500

Chart 64

Nephrectomies Complications by Procedure and Severity*

	Total complication rate % (N)	Known Intra-operative rate %	Known Post-operative rate %
Radical Nephrectomy:			
Open	***21.2 (65/306)***	***6.5*** **(4 major, 8 minor)**	***12.4*** **(13major, 23minor)**
Laparoscopic	***17.7 (133/751)***	***2.8*** **(4 major, 11minor)**	***13.0*** **(24major, 69minor)**
Nephroureterectomy:			
Open	***32.4 (12/37)***	***2.7*** **(not recorded)**	***29.7*** **(2 major, 9minor)**
Laparoscopic	***22.3 (52/233)***	***3.9*** **(1 minor)**	***16.3*** **(6 major, 26minor)**
Simple/Partial Nephrectomy:			
Open	***16.7 (29/174)***	***2.3*** **(1 major, 0minor)**	***10.9*** **(2 major, 17minor)**
Laparoscopic	***19.2 (47/245)***	***8.5*** **(3 major, 4 minor)**	***10.6*** **(5 major, 20minor)**

*** N.B. Neither the severity nor timing of the complication (intra or post-operative) was recorded in all cases**

Chart 65

Radical Nephrectomies - Significance of Complications

Overall morbidity Rate: Open = 21.2%(65/306); Laparoscopic = 17.7% (133/751)
30 day mortality Rate: Open = 2.9% (9/306); Laparoscopic = 1.1% (8 / 751)

	Open		Laparoscopic	
	N	*%*	N	*%*
No action required	**8**	***12.3***	**13**	***9.8***
Contributed to death	**2**	***3.1***	**6**	***4.5***
Delayed discharge	**12**	***18.5***	**35**	***26.3***
Required medical treatment	**15**	***23.1***	**39**	***29.3***
Required surgery	**10**	***15.4***	**23**	***17.3***
Not recorded	**18**	***27.7***	**17**	***12.8***

Chart 66

Nephroureterectomies - Significance of Complications

Overall morbidity Rate: Open = 32.4%(12/37); Laparoscopic = 22.3% (52/233)
30 day mortality Rate: Open = 0% (0/37); Laparoscopic = 2.1% (5 / 233)

	Open		Laparoscopic	
	N	%	N	%
No action required	1	8.3	3	5.8
Contributed to death	0	0.0	1	1.9
Delayed discharge	5	41.7	13	25.0
Required medical treatment	3	25.0	15	28.8
Required surgery	1	8.3	6	11.5
Not recorded	2	16.7	14	26.9

Chart 67

Partial / Simple Nephrectomies - Significance of Complications

Overall morbidity Rate: Open = 16.7%(29/174); Laparoscopic = 19.2% (47/245)
30 day mortality Rate: Open = 0% (0/174); Laparoscopic = 1.6% (4/245)

	Open		Laparoscopic	
	N	%	N	%
No action required	3	10.3	7	14.9
Contributed to death	0	0.0	1	2.1
Delayed discharge	5	17.2	9	19.1
Required medical treatment	11	37.9	10	21.3
Required surgery	2	6.9	6	12.8
Not recorded	8	27.6	14	29.8

Chart 68

Nephrectomies – Parenchymal Tumours
Predominant cell type
Reported in 99% parenchymal tumours (372/375)

Predominant Cell Type	N	*% of total reported (372)*
Clear Cell	304	*81.7*
Papillary	33	*8.9*
Oncocytoma	4	*1.1*
Chromophobe	20	*5.4*
Collecting duct	3	*0.8*
Other	8	*2.2*

Chart 69

Nephrectomies – Urothelial Tumours
Site of Tumour
Reported in 100% urothelial tumours (77)

Site of Tumour	N	*% of total reported (77)*
Calyx	5	*6.5*
Pelvis	28	*36.4*
PUJ	1	*1.3*
Ureter	38	*49.4*
Multiple sites	5	*6.5*

Chart 70

Nephrectomy Follow ups

Follow up recorded in 25.4% (539 / 2118) patients

Median time to latest Follow-up = 71 days; range 0 – 417 days

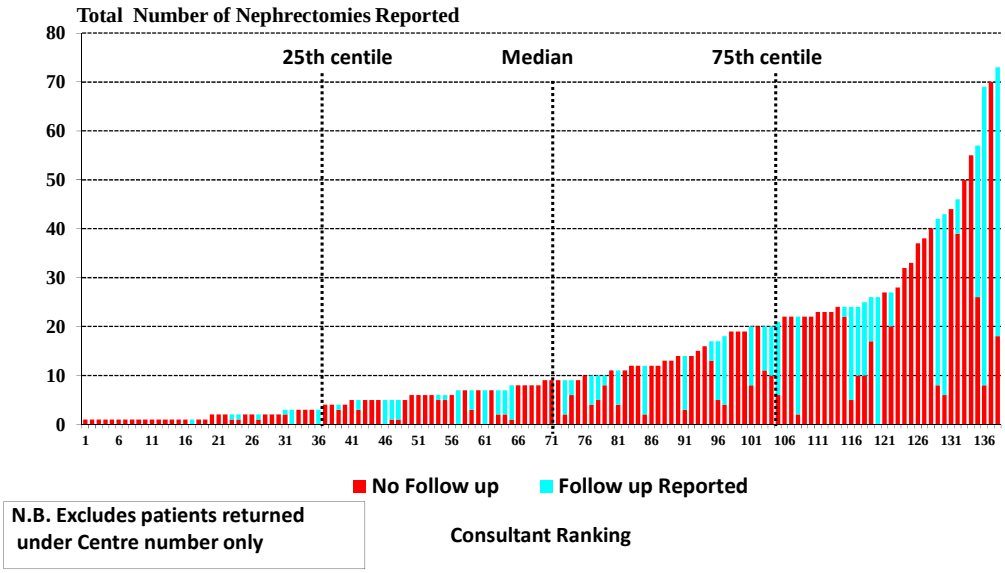
Median number of Follow-ups = 0; Range: 0 - 4

Time to latest follow-up:

Time from Operation to follow-up	N	*% of total known (539)*
0 – 90 days	296	*55.4*
91 – 180 days	117	*21.9*
181 – 360 days	111	*20.8*
>=361 days	10	*1.9*

Chart 71

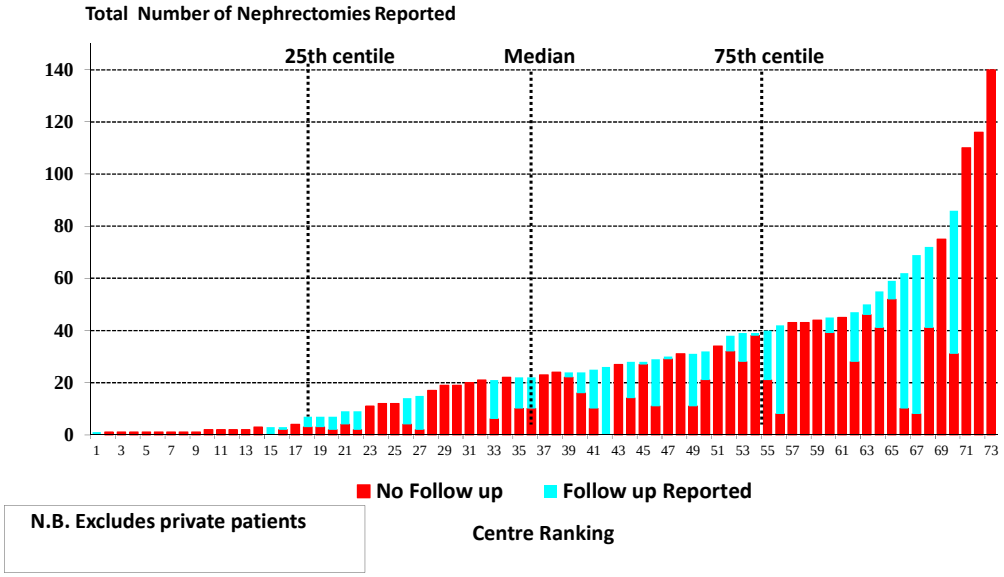
Total Number of Nephrectomies Reported per Consultant
Including number with follow-ups
Follow up recorded in 25.4% (539 / 2118) patients



N.B. Excludes patients returned under Centre number only

Chart 72

Total Number of Nephrectomies Reported per Centre
Including number with follow-ups
Follow up recorded in 25.4% (539 / 2118) patients



N.B. Excludes private patients

Chart 73

Nephrectomy - Current Status
Follow up recorded in 25.4% (539 / 2118) patients
Median time to latest Follow-up = 71 days; range 0 – 417 days

	N	*% of total (539)*
Alive with no evidence of renal cancer	402	*74.6*
Alive with local recurrence of renal cancer	1	*0.2*
Alive with lymph node involvement	4	*0.7*
Alive with metastatic disease	33	*6.1*
Dead	5	*0.9*
Not recorded	94	*17.4*

Late complications were reported in 62/539 (11.5%) patients:
12 wound infection
6 wound hernia
30 renal
8 wound pain
22 other

Chart 74

Nephrectomy - Current Status
Follow up recorded in 25.4% (539 / 2118) patients
Median time to latest Follow-up = 71 days; range 0 – 417 days

Time to follow up	N	% of total (539)	0 – 90 days N	%	91-180 days N	%	181 – 360 days N	%	>=361 days N	%
Alive with no evidence of renal cancer	402	*74.6*	207	*71.6*	89	*74.8*	96	*85.0*	7	*70.0*
Alive with local recurrence of renal cancer	1	*0.2*	1	*0.3*	0	-	0	-	0	-
Alive with lymph node involvement	4	*0.7*	2	*0.7*	1	*0.8*	1	*0.9*	0	-
Alive with metastatic disease	33	*6.1*	19	*6.6*	7	*5.9*	6	*5.3*	0	-
Dead	5	*0.9*	2	*0.7*	1	*0.8*	1	*0.9*	1	*10.0*
Not recorded	94	*17.4*	58	*20.1*	21	*17.6*	9	*8.0*	2	*20.0*

D. Newly Diagnosed Cancer Registry

Participants and Overall Figures

- 241 Consultants from 72 Centres provided data on 16,006 newly presenting urological tumours.
- 0.2% (33/16,006) were from the private patients of 12 Consultants
- Range of Consultants per Centre = 1 - 10, (Median 4)
- Median number of tumours per Consultant = 28, Range 1 - 317
- Median number of tumours per Centre = 188, Range 1 – 1415
- 42.4% of the data was individually entered the rest was bulk imported

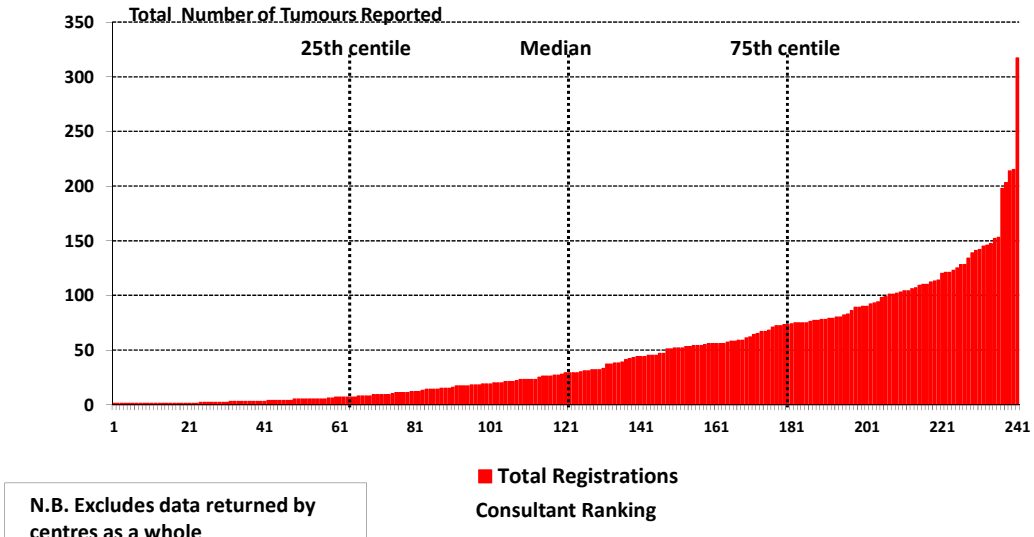
The following data was included:

- Patients for who the date of diagnosis fell within the time period. (01/01/2010 to 31/12/2010). 15,557 registrations (97.2%).
- Patients for whom the date of diagnosis was either not included or the patient was a tertiary referral, but the referral date fell within the study period. (01/01/2010 to 31/12/2010) 449 registrations (2.8%).

The completeness of data when bulk imported from in-house systems is less than when individually entered into the web-based database making validation and analyses more complicated.

Chart 75

Total Number of Newly Presenting Tumours Reported per Consultant
Median: 28 (Interquartile Range 7 - 73)

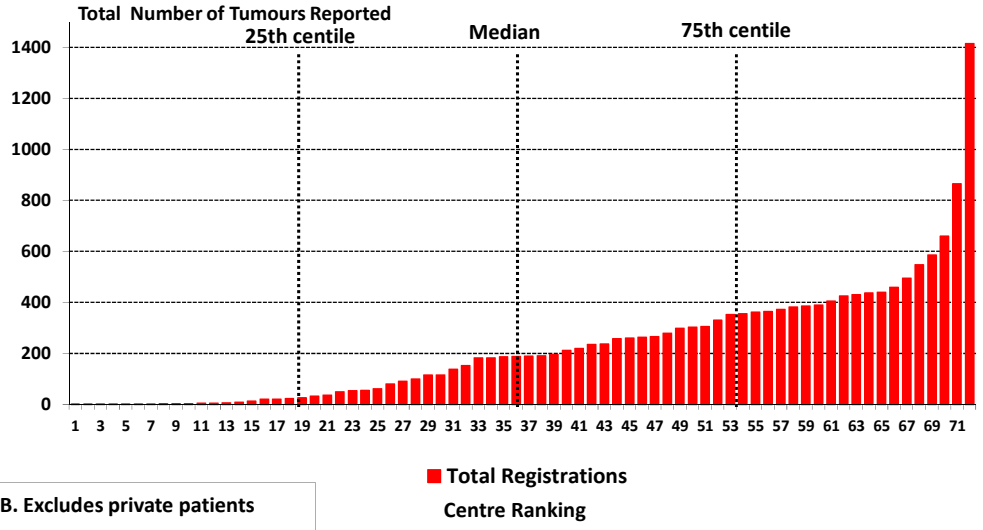


N.B. Excludes data returned by centres as a whole

Chart 76

Total Number of Newly Presenting Tumours Reported per Centre

Median: 188 (Interquartile Range 23 - 355)



N.B. Excludes private patients

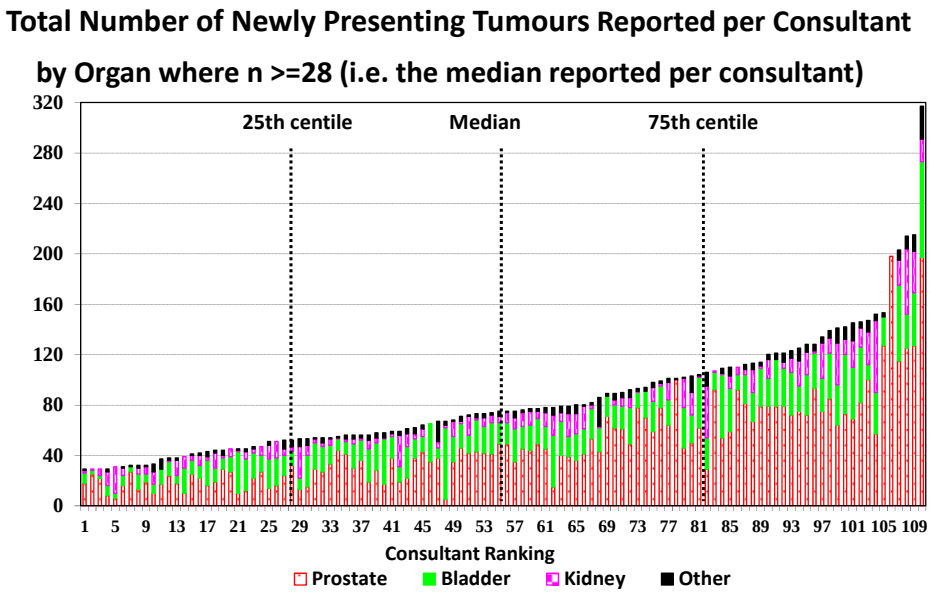
Chart 77

Number of Newly presenting Tumours by Organ per Consultant
241 Consultants reported 16,163 Tumours
Median Total per Consultant = 28

Organ	Total Number Reported	Median per Consultant	Range
Prostate *	9276	14	0 – 198
Bladder	3969	7	0 – 76
Kidney	1613	1	0 – 57
Testis	446	1	0 – 20
Pelvis/Ureter	237	0	0 – 9
Penis	135	0	0 – 20
Urethra	19	0	0 – 3
Prostatic Urethra	5	0	0 - 2

* Includes 36 registrations with High Grade PIN only

Chart 78



N.B. Excludes data returned by centres as a whole

Chart 79

Overall Data by Organ

Organ	Number Recorded	Percentage of Total (16,006)	Median Age at Diagnosis	Age Range	Males	Females
Prostate *	9276	*58.0*	70	40 - 97	9221	
Bladder	3969	*24.8*	74	17 - 100	2893	1062
Kidney	1613	*10.1*	68	16 - 92	994	612
Testis	446	*2.8*	37	14 - 87	443	
Pelvis/Ureter	237	*1.5*	71	44 - 90	144	90
Penis	135	*0.8*	65	29 - 94	134	
Urethra	19	*0.1*	68	35 - 89	15	4
Prostatic Urethra	5	*0.0*	71	65 - 82	5	
Other	25	*0.2*	69	50 - 82	16	4
Not recorded	281	1.8	66	40 - 97	255	29

* Includes 36 registrations with High Grade PIN only

Chart 80

Overall Data by Organ by Year

Organ	2010 Number Recorded	*% of Total (16,006)*	2004 Number Recorded	*% of Total (24,532)*	1999 Number Recorded	*% of Total (19,009)*
Prostate	9276*	*58.0*	14858#	*60.6*	9277	*48.8*
Bladder	3969	*24.8*	6073	*24.8*	6584	*34.6*
Kidney	1613	*10.1*	2104	*8.6*	1661	*8.7*
Testis	446	*2.8*	750	*3.1*	838	*4.4*
Pelvis/Ureter	237	*1.5*	291	*1.2*	281	*1.5*
Penis	135	*0.8*	196	*0.8*	165	*0.9*
Urethra	19	*0.1*	29	*0.1*	-	
Prostatic Urethra	5	*0.0*	15	*0.1*	-	
Other	25	*0.2*	29	*0.1*	120	*0.6*
Not recorded	281	1.8	187	*0.8*	85	*0.4*

Including registrations with High Grade PIN only:
***36; # 84**

Chart 81

Total Registrations per Country
Prostate, Bladder, Kidney, Testis, Pelvis/Ureter & Penile Tumours*

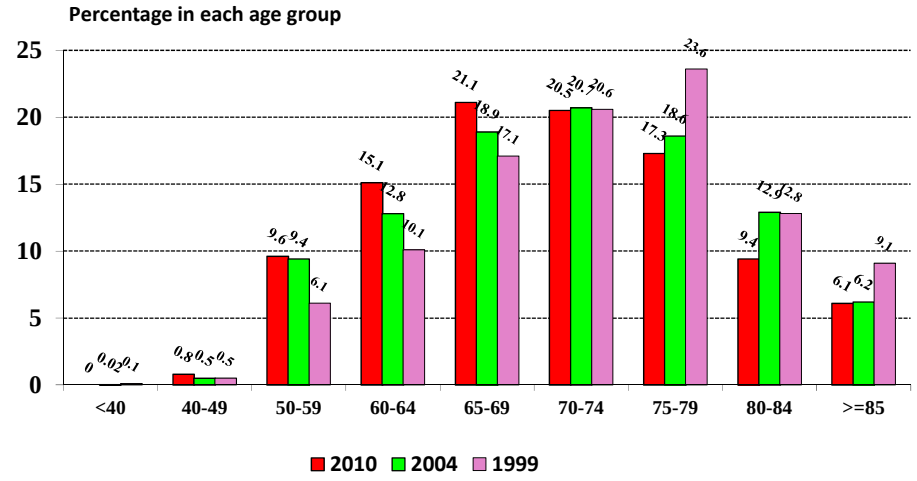
Region	2010 Total Registrations* BAUS	National figures**	2009 BAUS % National	2004 BAUS % National	1999 BAUS % National
England	15036	48533	*40.0*	*50.8*	*44.0*
Scotland	103	3745	*2.7*	*18.8*	*17.4*
Wales	834	3738	*22.3*	*53.3*	*35.5*
Northern Ireland	0	1531	*0*	*37.6*	*24.5*
Total UK	22530	57547	*27.8*	*48.1*	*40.7*

**England : cancer statistics - registrations of cancer diagnosed in 2008, England. Series MBI no. 39 – 2011
Wales: Welsh Cancer Intelligence & Surveillance Unit – 2009: www.wales.nhs.uk
Scotland:Scottish Cancer Registry, Scottish Cancer Intelligence Group, ISD Scotland 2008: www.isdscotland.org
Northern Ireland:Northern Ireland Cancer Registry - 2008 – www.qub.ac.uk/nicr

Chart 82

Percentage Age Distribution - Prostate Tumours

BAUS 2010 median: 70 Years; Range 16 -101 (n= 9,046*)
BAUS 2004 median: 72 Years; Range 21 -103 (n= 14,665*)
BAUS 1999 median: 73 Years; Range 21 -100 (n= 8,870*)

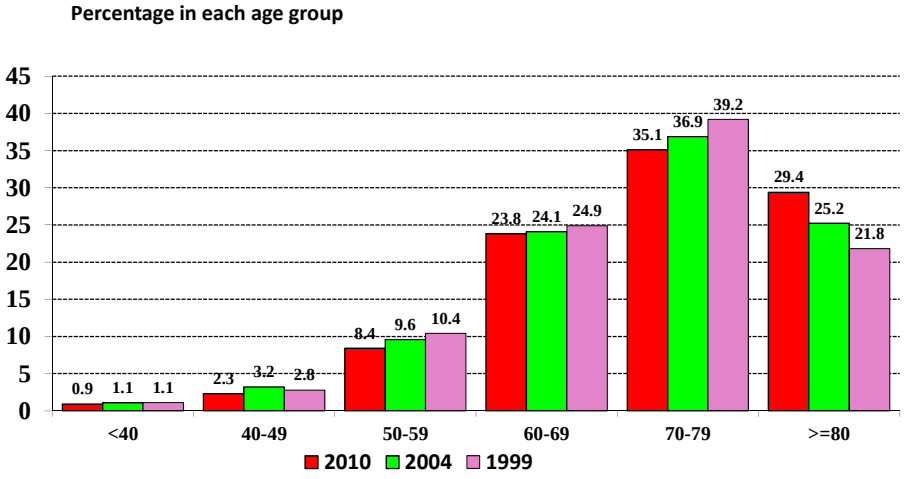


•Age could be calculated when both date of birth and diagnosis date were recorded
•The reductions in age at diagnosis over the years are significant at the 95% CI

Chart 83

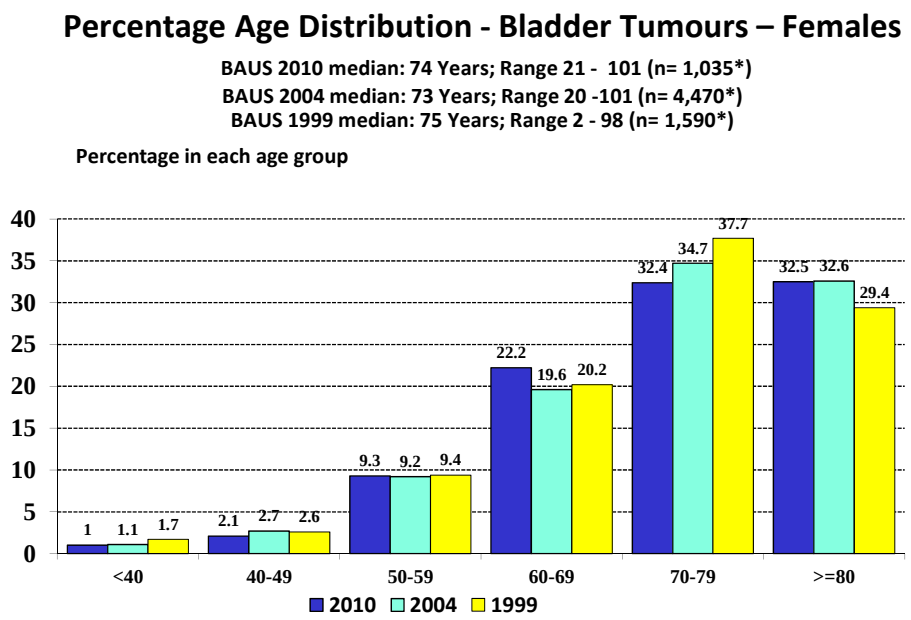
Percentage Age Distribution - Bladder Tumours - Males

BAUS 2010 median: 74 Years; Range 25 - 99 (n= 2,843*)
BAUS 2004 median: 73 Years; Range 20 -101 (n= 4,470*)
BAUS 1999 median: 72 Years; Range 6 - 99 (n= 4,664*)



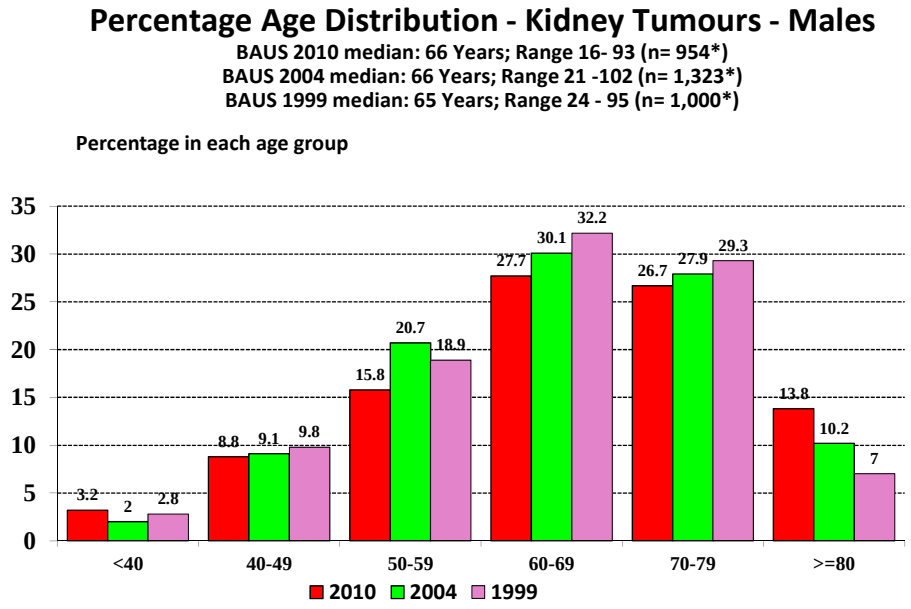
* Age could be calculated when both date of birth and diagnosis date were recorded

Chart 84



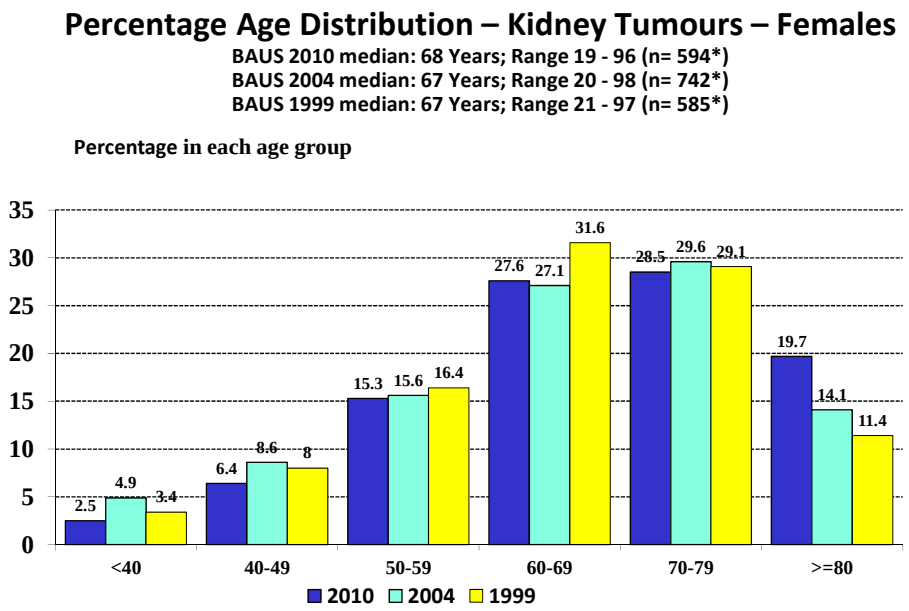
* Age could be calculated when both date of birth and diagnosis date were recorded

Chart 85



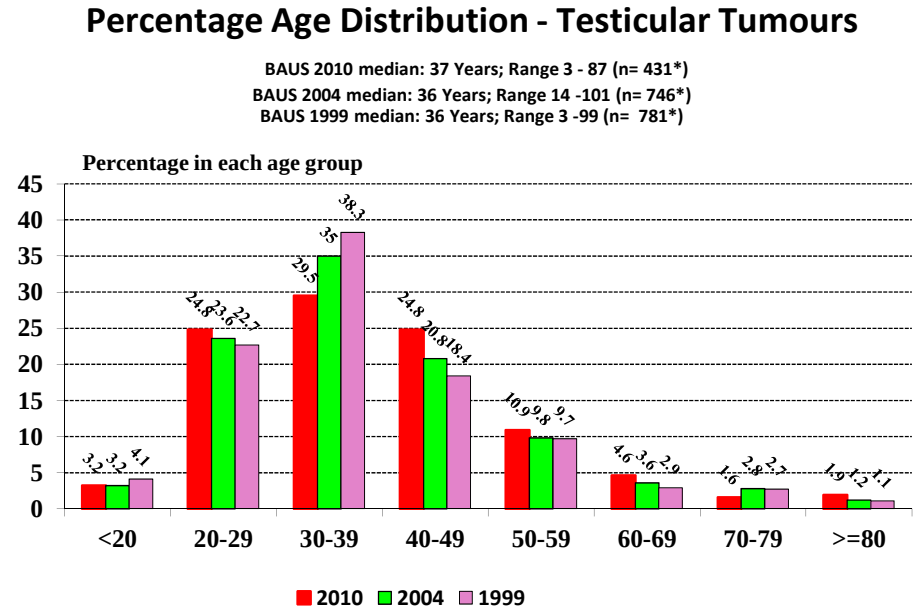
* Age could be calculated when both date of birth and diagnosis date were recorded

Chart 86



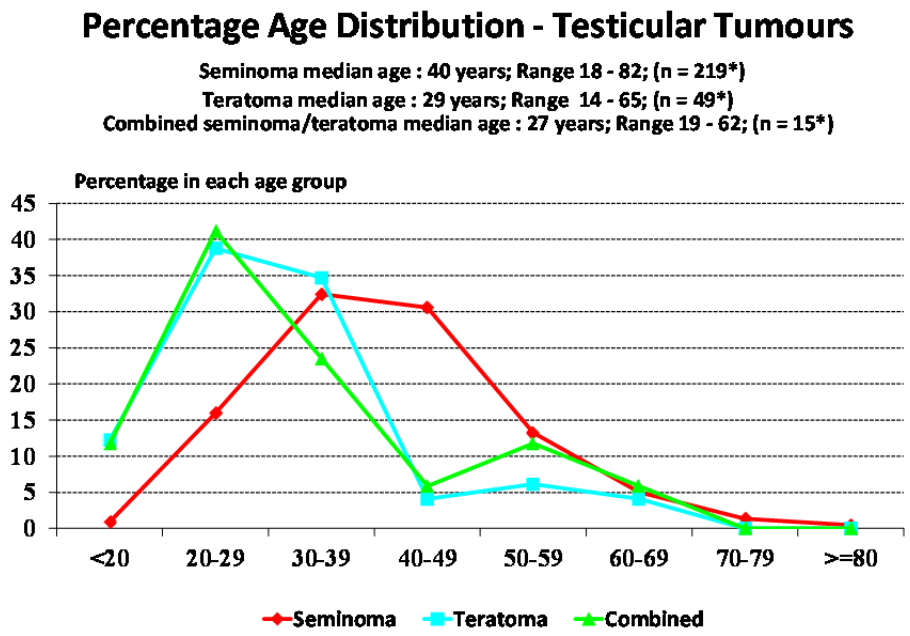
* Age could be calculated when both date of birth and diagnosis date were recorded

Chart 87



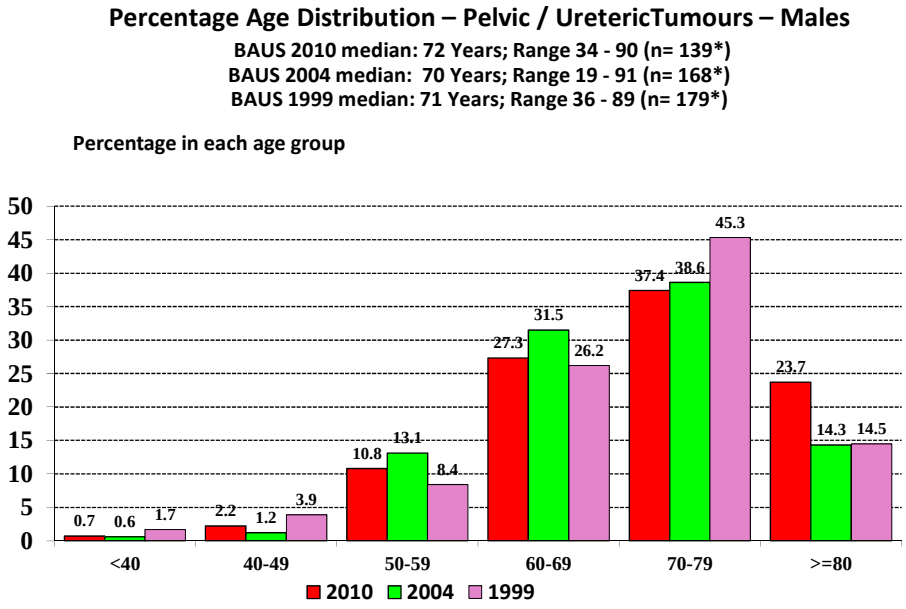
* Age could be calculated when both date of birth and diagnosis date were recorded

Chart 88



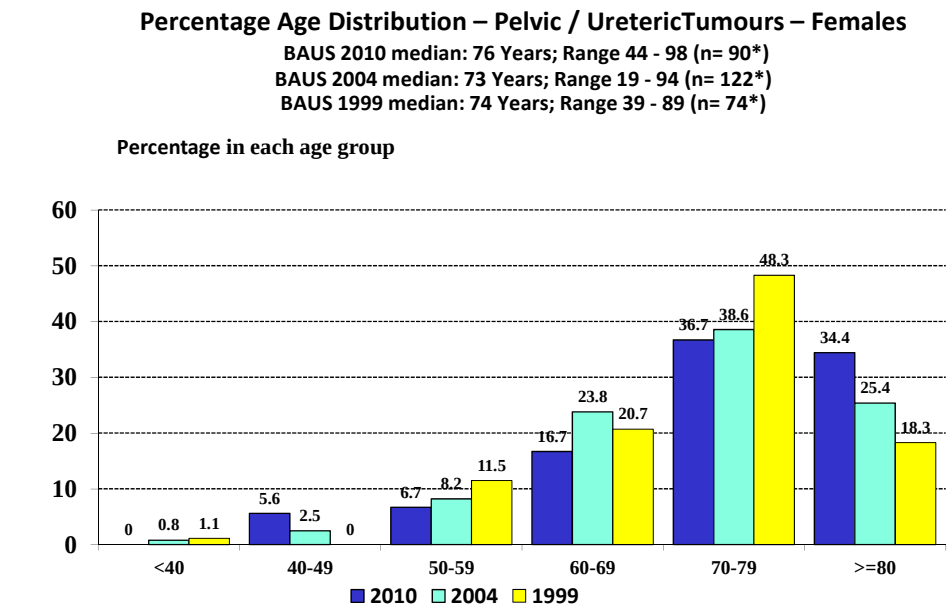
* Age could be calculated when both date of birth and diagnosis date were recorded = 431/446 (97%).
Histology was reported in 359 of these tumours. (359/431 = 83%), 76 of these were histologies other than the above groups

Chart 89



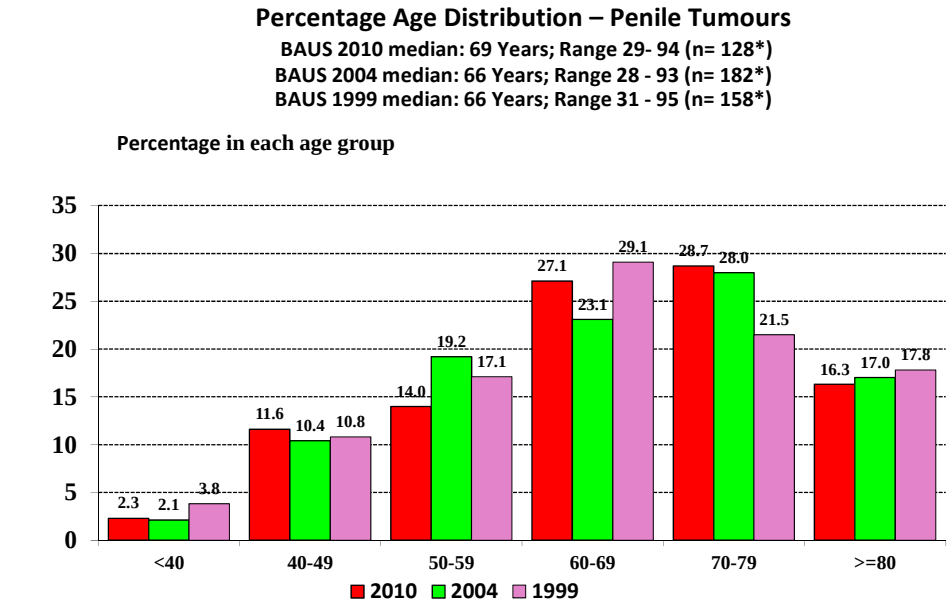
* Age could be calculated when both date of birth and diagnosis date were recorded

Chart 90



* Age could be calculated when both date of birth and diagnosis date were recorded

Chart 91



* Age could be calculated when both date of birth and diagnosis date were recorded

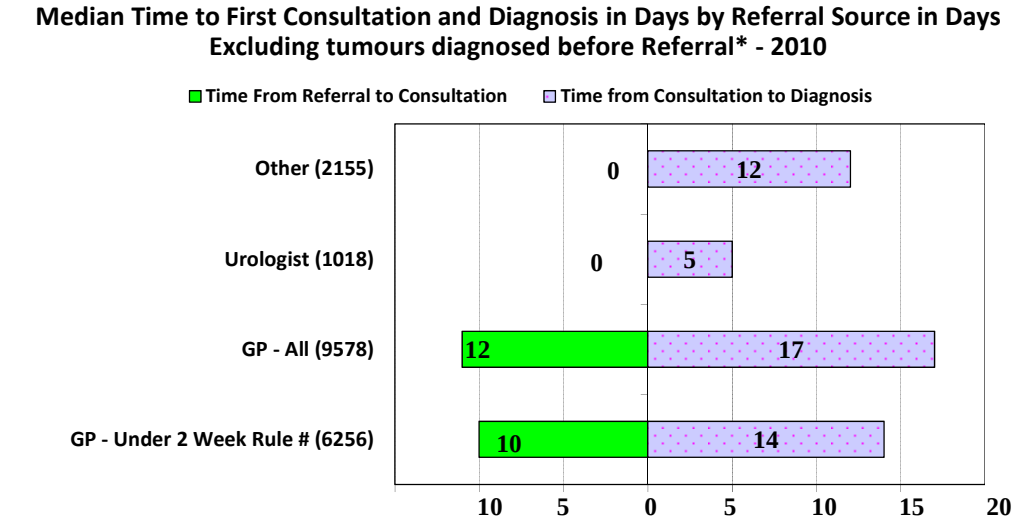
E. Times between referral, consultation, diagnosis and treatment

In this section we have included charts from the 2004 dataset to allow for comparisons.

The overall time from referral to diagnosis has fallen significantly from 2004 and is now the shortest since data collection started in 1999.

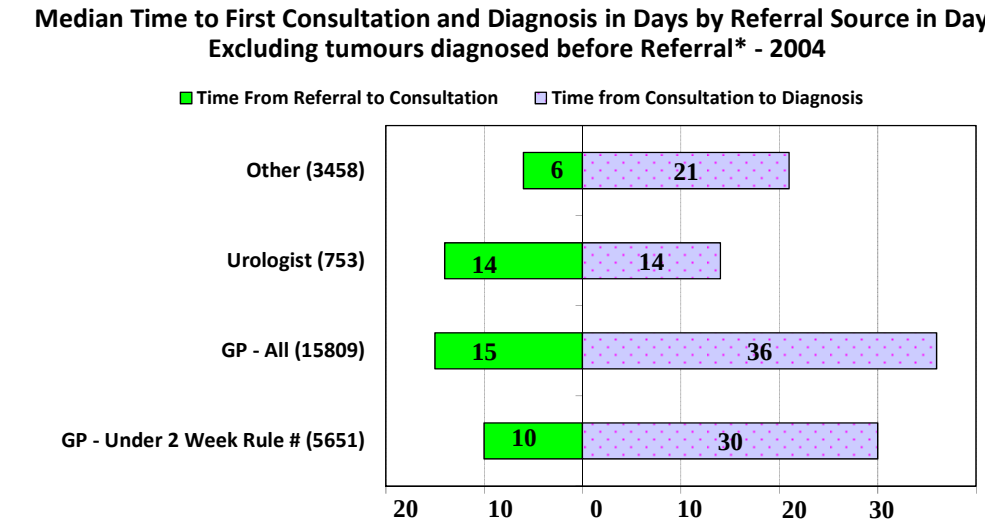
Date of definitive treatment was only recorded in 69% of returns and thus interpretation of the data should be cautious. In some cases, the date of definitive treatment was recorded as being before the date of diagnosis! Any negative times between diagnosis and definitive treatment date were treated as 0 i.e. definitive treatment date = date of diagnosis.

Chart 92



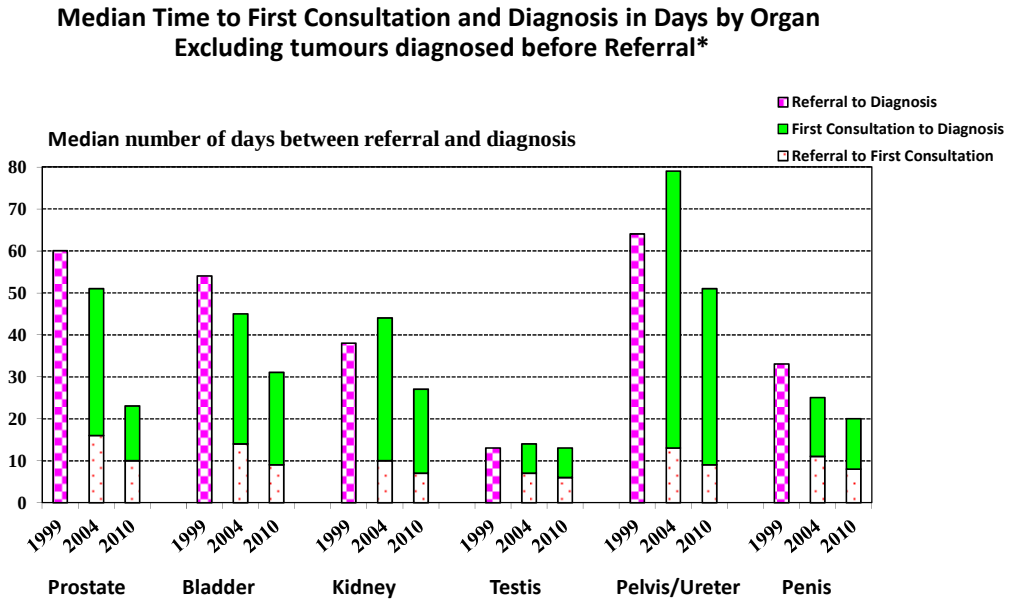
* Times were calculated when dates of referral, consultation and diagnosis were known and diagnosis date was not before referral date (N = 13,145/16,006 = 82% tumours)
Referral Source was recorded in 12,751/13,145 (97%) cases
Referral priority was recorded in 99.7% (9011/9037) GP referrals in England where 2 week rule operates

Chart 93



* Times were calculated when dates of referral, consultation and diagnosis were known
and diagnosis date was not before referral date (N = 20,189/24,532 = 82% tumours)
Referral Source was recorded in 20,020/20,189 (99%) cases
Referral priority was recorded in 96% (14601/15152) GP referrals in England where 2 week rule operates

Chart 94



* Times were calculated when dates of referral, consultation and diagnosis were known
and diagnosis date was not before referral date . Date of first consultation not recorded in 1999

Chart 95

Median Total Times to Diagnosis in Days - All Referrals
Excluding Patients Diagnosed before Referral

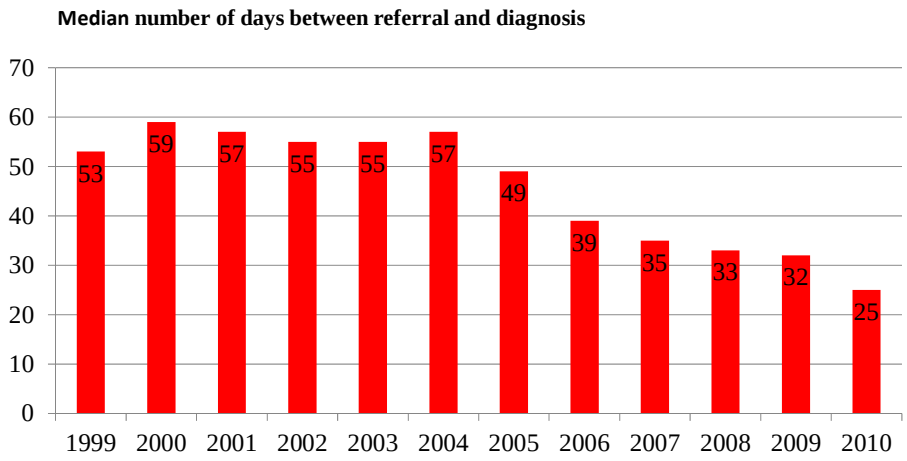


Chart 96

Times to Definitive Treatment in Days by Organ – 2010 and 2004
Excluding tumours diagnosed or treated before referral

Organ	Median Time between Referral and Definitive Treatment in days		Median Time between Diagnosis and Definitive Treatment in days	
	2004	2010	2004	2010
Prostate	112	54	31	26
Bladder	63	38	0	0
Kidney	65	54	0	12
Testis	16	15	0	0
Pelvis/Ureter	117	83	6	22
Penis	41	57	15	24

Definitive treatment date was recorded in 69% tumours (16923/24532) in 2004 and 79% in 2010 (18,442/22,756)

F. Histology and Staging

Histological confirmation was only available in 72% of all tumours. This has decreased steadily since 1999.

Participants were asked to return both clinical and, where appropriate, pathological* TNM categories using the 2002 version of the TNM classification for Urological tumours which were included in the data dictionary available to all participants.

In order to make interpretation of the resultant information easier each patient was staged, wherever possible, using the classifications as shown in the following charts. If the pathological TNM categories were given and appropriate then these were used for the staging, failing this clinical TNM categories were used.

The number of returns having either the full pathological TNM or clinical TNM categories is poor and a reflection of the proportion of data that was uploaded in bulk from in-house systems. (A substantial proportion of returns do not include any N and M categories or these were recorded as "X" – Cannot be assessed.) The data on the following staging charts should therefore be regarded with caution.

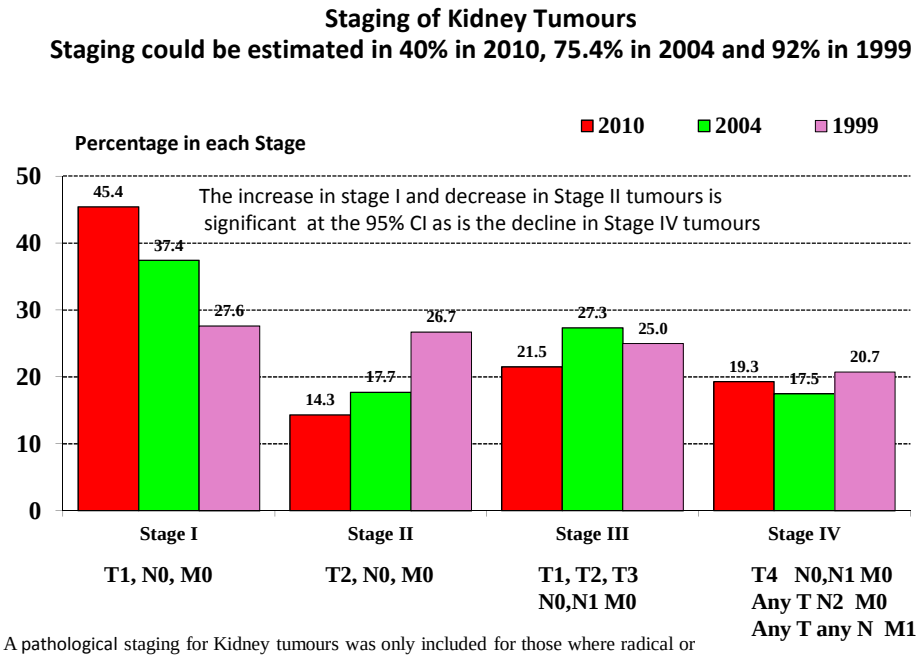
*The pathological assessment of the primary tumour (pT) entails a "resection of the primary tumour or biopsy adequate to evaluate the highest pT category"

Chart 97

Known Histological Confirmation of Diagnosis by Organ

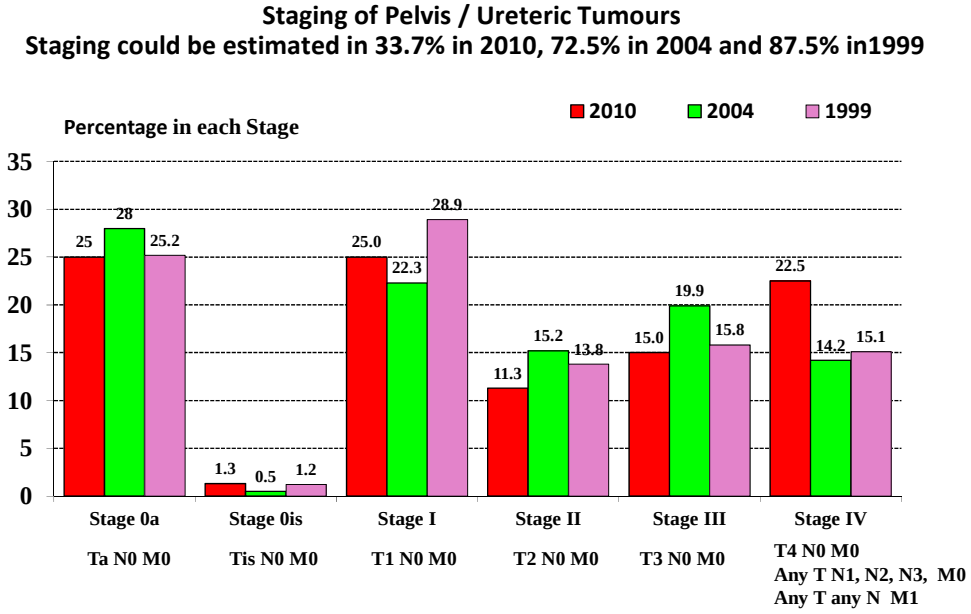
Organ	2010 N	2010 %	2004 N	2004 %	1999 N	1999 %
Prostate	6842	*74.8*	13881	*95.3*	8605	*94.4*
Bladder	3140	*81.0*	5689	*96.5*	6344	*97.8*
Kidney	797	*51.0*	1425	*70.1*	1436	*88.0*
Testis	344	*77.5*	685	*93.6*	815	*99.4*
Pelvis/Ureter	134	*58.3*	235	*83.0*	272	*97.8*
Penis	105	*78.4*	186	*98.9*	162	*98.8*
Urethra	15	*78.9*	28	*100.0*	-	
Prostatic Urethra	5	*100.0*	15	*100.0*	-	
Other or Not Recorded	18	*6.4*	80	*30.4*	185	*94.9*
Totals	11410	*72.7*	22224	*92.6*	17819	*95.3*

Chart 98



N.B. A pathological staging for Kidney tumours was only included for those where radical or organ conserving surgery was performed

Chart 99



N.B. A pathological staging for Pelvis / Ureteric tumours was only included for those where radical or organ conserving surgery was performed

Chart 100

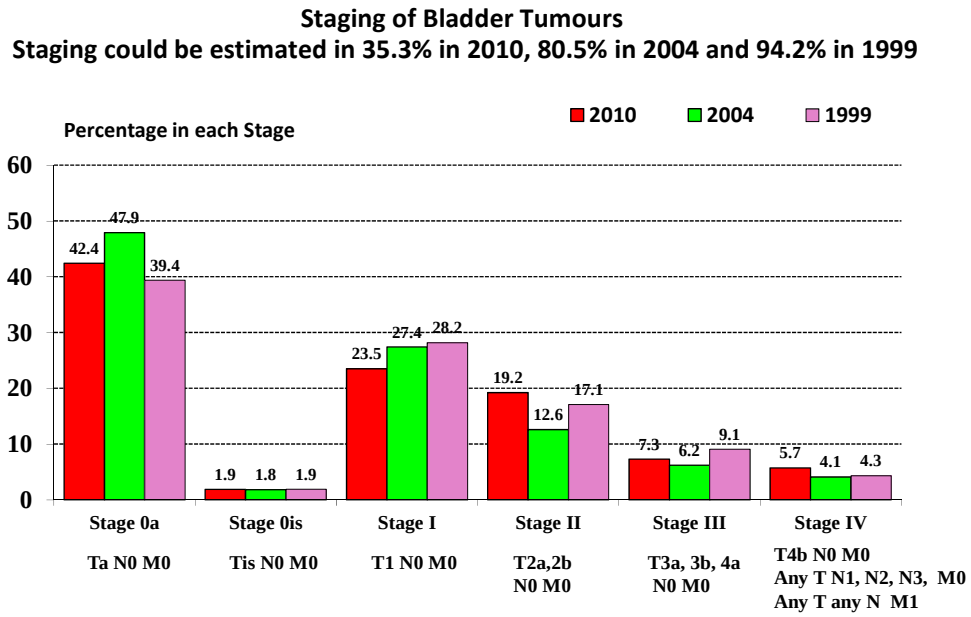
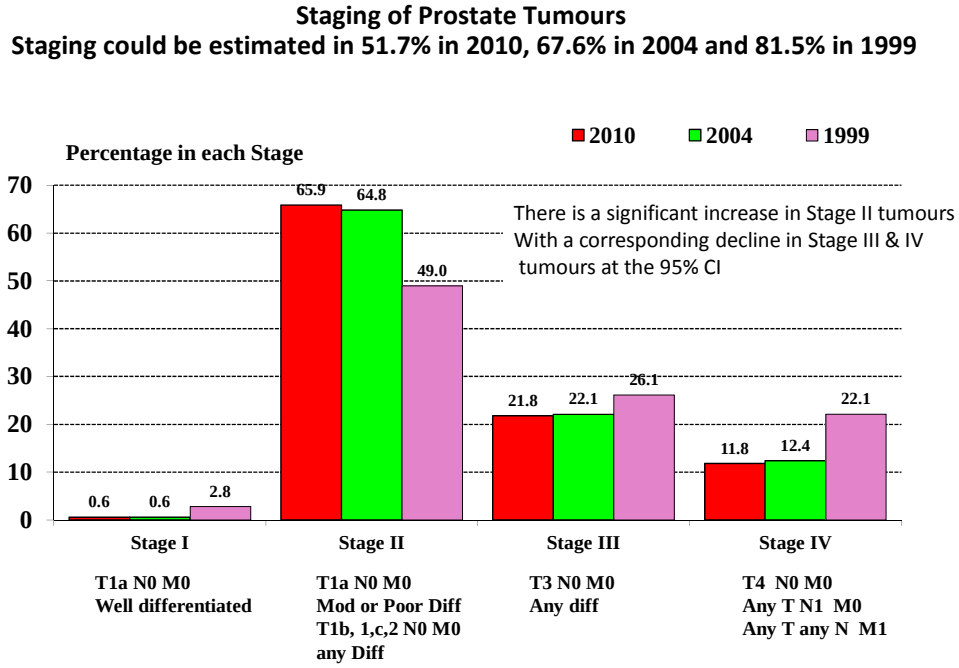


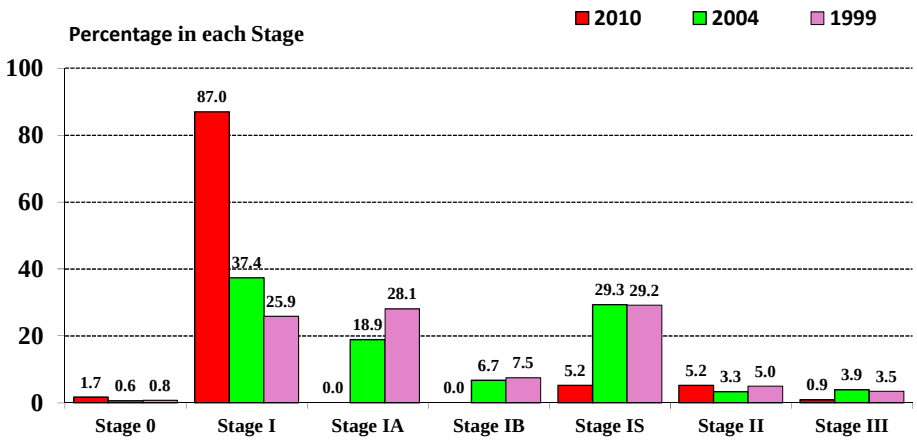
Chart 101



N.B. A pathological staging for Prostate tumours was only included for those where radical surgery was performed

Chart 102

Staging of Testicular Tumours
Staging could be estimated in 25.8% in 2010, 69.2% in 2004 and 86.2% in1999

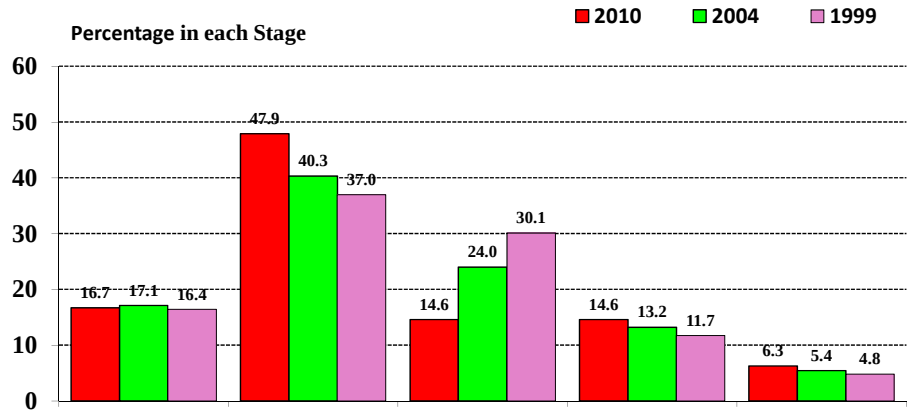


Stage 0 = Tis N0 M0 S0,SX
Stage I = T1,2,3,4 N0 M0 SX
Stage IA = T1, N0 M0 S0
Stage IB = T2, 3, 4, N0 M0 S0

Stage IS = Any T N0 M0 S1, 2, 3
Stage II = Any T, N1, 2, 3, M0, SX, 0, 1
Stage III =Any T, Any N, M1, 1a, SX, 0, 1,2, 3
Any T, N1, 2, 3, M0, S2, 3
Any T, Any N, M1b, Any S

Chart 103

Staging of Penile Tumours
Staging could be estimated in 35.5% in 2009, 65.8% in 2004 and 90.1% in1999



Tis, a N0 M0
T1 N0 M0
T2 N0, N1 M0
T1, 2 N2 M0
T3, N0,1,2, M0
T4 Any N M0
Any T N3 M0
Any T any N M1

G. Treatment Intention & Laparoscopic procedures

Chart 104

Initial Treatment Intention by Organ
Percentage & Total of Known Intent - 2010

Organ (Number Known)	Curative N	%	Palliative N	%	No active anti-cancer treatment N	%	% of Total Tumours Reported
Prostate (5368)	2230	*41.5*	1374	*25.6*	1764	*32.9*	*57.9*
Bladder (3259)	2812	*86.3*	178	*5.5*	269	*8.3*	*82.1*
Kidney (926)	623	*67.3*	169	*18.3*	134	*14.5*	*57.4*
Testis (235)	192	*81.7*	5	*2.1*	38	*16.2*	*52.7*
Pelvis/Ureter (123)	85	*69.1*	16	*13.0*	22	*17.9*	*51.9*
Penis (63)	54	*85.7*	6	*9.5*	3	*4.8*	*46.7*
Urethra (9)	8	*88.9*	1	*11.1*		*0.0*	*47.4*
Prostatic Urethra (5)	3	*60.0*		*0.0*	2	*40.0*	*100.0*

Chart 105

Initial Treatment Intention by Organ
Percentage & Total of Known Intent - 2004

Organ (Number Known)	Curative N	%	Palliative N	%	No active anti-cancer treatment N	%	% of Total Tumours Reported
Prostate (11615)	5131	*44.2*	4750	*40.9*	1734	*14.9*	*78.2*
Bladder (5132)	4574	*89.1*	450	*8.8*	108	*2.1*	*84.5*
Kidney (1765)	1273	*72.1*	332	*18.8*	160	*9.1*	*83.9*
Testis (620)	613	*98.9*	6	*1.0*	1	*0.2*	*82.7*
Pelvis/Ureter (234)	189	*80.8*	32	*13.7*	13	*5.6*	*80.4*
Penis (146)	132	*90.4*	9	*6.2*	5	*3.4*	*74.5*
Urethra (25)	15	*60.0*	7	*28.0*	3	*12.0*	*86.2*
Prostatic Urethra (11)	7	*63.6*	2	*18.2*	2	*18.2*	*73.3*

Chart 106

Initial Treatment Intention by Organ
Percentage & Total of Known Intent - 1999

Organ (Number Known)	Curative N	%	Palliative N	%	Surveillance N	%	% of Total Tumours Reported
Prostate (8291)	2465	*29.7*	4483	*54.1*	1343	*16.2*	*69.1*
Bladder (6105)	5096	*83.5*	820	*13.4*	189	*3.1*	*73.4*
Kidney (1579)	1191	*75.4*	307	*19.5*	81	*5.1*	*70.6*
Testis (789)	764	*96.8*	8	*1.0*	17	*2.2*	*70.9*
Pelvis/Ureter (268)	230	*85.8*	30	*11.2*	8	*3.0*	*75.8*
Penis (153)	136	*88.9*	15	*9.8*	2	*1.3*	*64.7*

Chart 107

Laparoscopic Procedures Performed as Percentage of Total Procedures reported*

Organ	2010			2004			2001		
	Open	Lap	Lap as % total	Open	Lap	Lap as % total	Open	Lap	Lap as % total
Prostate	662	221	*25.0*	2709	290	*9.7*	3838	45	*1.2*
Kidney	399	296	*8.4*	1345	169	*11.2*	1632	31	*1.9*
Pelvis / Ureter	64	35	*4.8*	187	34	*15.4*	295	6	*2.0*
Bladder	3164	7	*0.2*	5232	4	*0.1*	6854	7	*0.1*

* Laparoscopic procedures not recorded until 2001

Chart 108

Laparoscopic Surgery by Organ and Stage
Total Numbers recorded

Staging	Prostate			Bladder			Kidney			Pelvis/Ureter		
	2010	2004	2001	2010	2004	2001	2010	2004	2001	2010	2004	2001
Stage 0a	N/A	N/A	N/A	-	1	1	N/A	N/A	N/A	3	9	2
Stage I		-	-	1	2	-	56	107	22	4	6	3
Stage II	75	247	40	1	1	3	15	14	3	-	5	
Stage III	11	21	3	-	-	2	13	12	1	2	2	1
Stage IV	-	-	2	-	-	-	5	4	-	2	-	
Not Recorded	135	22	-	5	-	1	207	32	6	24	12	-
Totals	221	290	45	7	4	7	296	169	32	35	34	6

H. Clinical Trial Status and discussion at MDT meeting

Chart 109

Clinical Trial Status

Trial Status	2010		2004		2002*	
	N	%	N	%	N	%
Patient eligible, consented to and entered trial	181	1.1	554	2.3	597	2.1
Patient eligible for trial but declined entry	107	0.7	148	0.6	144	0.5
Patient ineligible for trial	1010	6.3	1231	5.0	1088	3.8
Patient not considered for trial	2524	15.8	7839	32.0	8746	30.8
Clinical trial status unknown	3952	24.7	4452	18.1	4879	17.2
Not Recorded	8231	51.4	10308	42.0	12897	45.5

*** First year recorded**

Chart 110

Was the Patient discussed at an MDT meeting with formation of a management plan?

Response	2010		2003*	
	N	%	N	%
Yes	13475	84.2	14967	55.0
No	561	3.5	9414	34.6
Not Known or Not Recorded	1970	12.3	2844	10.4

*** First year recorded**

I. Completeness of Data

Chart 111

Completeness of Data -1
Percentage and numbers of Total Returns unknown

Data Item	2010 Number Unknown	*% of Total Returns 16006*	2004 Number Unknown	*% of Total Returns 24532*	1999 Number Unknown	*% of Total Returns 22309*
Centre no or Cons no	0	*0*	0	*0*	9	*0.04*
Hospital number	#4351	*27.2*	**760	*3.1*	***257	*1.4*
NHS number	#	-	2975	*12.1*	6946	*36.5*
Postcode	##	-	948	*3.9*	1319	*6.9*
Sex	26	*0.2*	113	*0.5*	118	*0.6*
Date of Birth	###421	*2.6*	244	*1.0*	217	*1.1*
Organ	281	*1.7*	181	*0.7*	83	*0.4*
Date of Diagnosis	117	*0.7*	84	*0.3*	604	*3.2*
Referral Source	1001	*6.3*	1592	*6.5*	1096	*5.8*
Priority of GP Referrals	40/10287	*0.4*	776/17123	*4.5*	-	-
Date of Referral	1036	*6.5*	2419	*9.9*	1820	*9.6*
Date of First Consultation	996	*6.2*	2101	*8.6*	-	-
Date of Definitive Treatment	3486	*21.8*	7707	*31.4*	-	-
Delay to Diagnosis	1552	*9.7*	2738	*11.2*	-	-
Histological confirmation	303	*1.9*	593	*2.4*	321	*1.7*
Basis of diagnosis if no Histology	2500/4363	*57.3*	175/1713	*10.2*	71/875	*8.1*

 # - NHS number main patient identifier -random one automatically created if missing; ## No longer extracted; ### Age at diagnosis; ** includes 160 pp + 220 from 1 centre with data extraction problems ; * includes 198 pp**

Chart 112

Completeness of Data -2
Percentage and numbers of Total Returns unknown

Data Item	2010 Number Unknown	*% of Total Returns 16006*	2004 Number Unknown	*% of Total Returns 24532*	1999 Number Unknown	*% of Total Returns 19009*
Histology	268/11497	*2.3*	787/22226	*3.5*	258/17813	*1.4*
Differentiation	4136/11497	*36.0*	5230/22226	*23.5*	2220/17813	*12.4*
Clinical T Category	8822	*55.1*	2669	*10.9*	3357	*17.7*
Clinical N Category	9715	*60.7*	4057	*16.5*	6555	*34.5*
Clinical M Category	9721	*60.7*	4453	*18.2*	6467	*34.0*
Pathological T Category	7190/11497	*62.5*	9158/22226	*41.2*	6223/17813	*34.9*
Pathological N Category	8080/11497	*70.3*	9920/22226	*44.6*	9061/17813	*50.9*
Pathological M Category	8073/11497	*70.2*	9930/22226	*44.7*	9055/17813	*50.8*
PSA at time of Diagnosis	392/9276	*4.2*	2276/14858	*15.3*	1071/9277	*11.5*
Gleason Scores	2634/9276	*28.4*	2102/14858	*14.1*	-	-
Testicular S Category	389/446	*87.2*	436/750	*58.1*	307/838	*36.6*
Treatment Intention	6053	*43.8*	4949	*20.2*	1646	*8.7*
Treatment Type	187/10110	*1.8*	703/17559	*4.0*	331/15714	*2.1*
Clinical Trial Status	8231	*51.4*	10705	*43.6*	-	-
Discussed at MDT	1970	*12.3*	1907	*7.8*	-	-
Pathological Ref. No.	5875	*36.7*	6322	*25.8*	-	-

Participating Hospital Centres 2010

We are grateful to Consultants from the following Centres / Trusts who provided data for the analyses of the 2010 data:

Aberdeen Royal Infirmary

Addenbrooke's Hospital

Alexandra Hospital

Arrowe Park Hospital

Ayr Hospital

Barnet & Chase Farm Hospital

Barnsley Hospital NHS Foundation Trust

Bedford Hospital

Blackpool Victoria Hospital

Bradford Royal Infirmary

Bristol Oncology Centre; United Bristol Health Care Trust

Broomfield Hospital

Buckinghamshire Hospitals NHS Trust

Causeway Hospital

Chesterfield & North Derbyshire

Churchill Hospital

City Hospitals Sunderland NHS Foundation Trust

Colchester Hospital University NHS Foundation Trust

Cwm-Taf LHB (Royal Glamorgan/Prince Charles)

Darent Valley Hospital

Derby Hospitals NHS Foundation Trust

Derriford Hospital

Diana, Princess of Wales Hospital; Goole & District Hospital; Scunthorpe General Hospital

Doncaster & Bassetlaw Hospitals NHS Trust

Dorset County Hospital

Dudley Group of Hospitals NHS Trust

East Sussex Hospitals NHS Trust

Epsom and St Helier University Hospitals

Freeman Hospital

Gartnavel General Hospital

George Eliot Hospital

Glan Clwyd Hospital

Glasgow Royal Infirmary

Gloucestershire Royal Hospital

Great Western Hospital, Swindon

Guy's & Thomas's Hospital

Harrogate District Hospital

Hemel Hempstead General Hospital; Mount Vernon & Watford Hospitals

Hereford Hospitals NHS Trust

Huddersfield Royal Infirmary

James Paget Hospital

Kidderminster General Hospital

King George Hospital

King's Mill Hospital

Leicester General Hospital

Leighton Hospital

Lincoln & Louth NHS Trust

Lister Hospital; Queen Elizabeth II Hospital, Welwyn

Manchester Royal Infirmary

Medway Maritime Hospital

Milton Keynes General Hospital

Morriston Hospital

New Cross Hospital, Wolverhampton

Noble's Isle of Man Hospital

Norfolk & Norwich Hospital

North Bristol NHSTrust (Southmead)North Hampshire / Frimley Park

Northampton General Hospital

Nottingham City Hospital

Pinderfields Hospital

Portsmouth Hospitals NHS Trust

Princess Alexandra Hospital, Harlow

Queen Elizabeth Hospital, B'ham

Raigmore Hospital

Rotherham NHS Foundation Trust

Royal Alexandra Hospital (Paisley)

Royal Berkshire NHS Foundation Trust

Royal Bolton Hospital NHS Foundation Trust

Royal Bournemouth Hospital

Royal Devon and Exeter Hospital

Royal Hallamshire Hospital

Royal Liverpool University Hospital

Royal Preston Hospital

Royal Shrewsbury Hospital

Royal Surrey County Hospital; Frimley Park Hospital

Royal Sussex County Hospital

Royal United Hospital, Bath

Royal West Sussex NHS Trust, St Richard's Hospital

Salisbury District Hospital

Sandwell District General Hospital

Scarborough Hospital

Southampton General Hospital

Southend University Hospital NHS Foundation Trust

Southern General Hospital

Southport & Ormskirk NHS Trust

St Bartholomew's Hospital

St George's Hospital

St James's University Hospital

St Mary's Hospital, IOW

St Mary's Hospital, London

Stepping Hill Hospital

Stirling Royal Infirmary

Stobhill Hospital

Stracathro Hospital; Perth Royal Infirmary; Ninewells Hospital

Taunton And Somerset Hospital

Torbay Hospital

University College Hospital London

University Hospital of North Stafford

University Hospital Of Wales

Walsgrave Hospital

Warwick Hospital

West Wales General Hospital

Western General Hospital, Edinburgh

Whipps Cross Hospital

Whiston Hospital

Withington Hospital

Worcester Royal Infirmary

Worthing Hospital

Wrexham Maelor Hospital

Wrightington, Wigan and Leigh NHS Foundation Trust

York District Hospital