

Trends in secondary care urology activity data

Purpose

This paper provides information on trends in secondary care data for the specialty of urology.

Background

Decisions to change patterns of investment and services need to take account of population health needs and demands for care. Analysis of secondary care activity trends can contribute to understanding of the scale and nature of growth in demand, and should help to generate options and plans for managing changes in demand.

Secondary care data provides a partial view of overall demand, recording diagnosis and procedure for inpatient activity (elective, emergency and daycases). It does not include diagnosis or procedure for outpatient activity, and all non-hospital urology activity provided by community and primary care staff is excluded.

Accurate and consistent coding within and between trusts is needed to allow valid comparisons. Differences in models of care and coding practices can underlie changing trends, rather than 'true' differences in population health need and demand.

Given these limitations, it is important that secondary care data analysis is seen as a starting point for further enquiry, rather than providing definitive information on trends in demand.

This report does not provide information on health needs or outcome. A separate report by Paul Pilkington describes the limited routinely available information on urology disease and outcomes¹. This report noted:

- Incidence and mortality of prostate cancer in PCTs in Bristol and South Gloucestershire do not differ significantly from the national average. Standardised Years of Life Lost (SYLL) rates are above average for South Gloucestershire PCT.
- Incidence of bladder cancer is higher in males in Bristol North PCT and females in South Gloucestershire PCT, but mortality from bladder cancer is at or below national average. Standardised Years of Life Lost (SYLL) rates are above the national average for males in Bristol North PCT.

Relatively high rates of SYLL were attributed to random fluctuation (the annual numbers of deaths before the age of 75yrs are small). This indicator should be monitored to check whether this pattern is sustained over time.

¹ Mortality and incidence of prostate and bladder cancer in BNSSG. P Pilkington. South Gloucestershire PCT 2004.

Methods

Data analyses relate to the GP registered former Avon Health Authority population, using UBHT, NBT, RUH and Weston hospitals only during 1996/97 – 2003/04. Data is taken from hospital inpatient admission and outpatient datasets supplied to Avon IM&T Consortium by trusts.

Trends for the former Avon Health Authority population have been analysed, providing a longer term view of a relatively large population than would be possible for individual PCTs.

Cautions

Urology activity is defined as activity data recorded under the specialty code for urology. This means that urology activity undertaken by any other specialty is not included. As emergency urology admissions to UBHT are admitted under general surgery, data on urology emergencies for UBHT are an underestimate. Table 1 shows a 'step down' in emergency FCEs at UBHT between 1999/00 and 2001/02.

Coding of urodynamics has changed during the period of analysis. Urodynamics were previously recorded as daycases at NBT but now they are mainly recorded as outpatient activity. The number of urodynamics daycases peaked at 2874 in 1998/99, compared with 845 in 2003/04.

Findings

The following trends were observed for 1996/97 – 2003/04. Data is provided in table 1.

NBT provided over half of activity recorded for all categories (daycase, elective and non-elective inpatient, and outpatient attendances).

Total elective in-patient (IP) FCEs, admissions and hospital bed days have fallen (graph 1).

Total non-elective IP FCEs were stable until 2002/03, and admissions were falling. In 2003/04 FCEs and admissions rose. Bed days were at a higher level in 2002/03 and 2003/04. These changes can be attributed to a rise in NBT activity, other trust activity being relatively stable (although changes in UBHT during this period reduced recording of first FCEs for urology emergencies).

Average length of hospital in-patient stay for elective and emergency inpatient FCEs (LOS) has not changed. LOS tended to be longest at UBHT particularly for elective IPs.

The total number of daycases was stable but there were marked changes at sub-specialty level. Hospital provision of vasectomy declined then ceased. Urodynamics were recategorised as outpatient activity. There has been a clear increase in daycases in 'sub-specialty urology' ie those daycases falling outside the other major categories of lithotripsy, urodynamics and vasectomies.

Outpatient first and follow up attendances are increasing (graph 1). There has been a fall in the ratio of total to first attendances. This rise can only be partially explained by recategorisation of urodynamics.

Commonest urology diagnoses and procedures in 2003/04

Emergency inpatients (tables 2.1 and 2.2)

Urinary retention accounted for 201 of 1321 first FCEs for urology emergency inpatients, followed by 109 first FCEs for complications following surgical or medical care. Urethral catheterisation is by far the most commonly recorded procedure for emergency admissions (374 procedures, of which 271 were at NBT). Bristol North PCT and NBT have worked together during 2003/04 to reduce emergency catheter admissions. Where admissions had a LOS of less than one day recorded, it was agreed that there was a high likelihood that the admission could have been avoided by redirecting referrals of people with blocked catheters to trained community staff.

Elective inpatients (tables 2.3 and 2.4)

More than one third of elective inpatient FCEs diagnoses were accounted for by malignant neoplasm of the bladder, prostate and hyperplasia of the prostate. Cystoscopy was the commonest procedure, recorded for about one third of FCEs, and endoscopic prostatectomy for one sixth.

Daycases (tables 2.5 and 2.6)

'Unspecified haematuria' was the commonest diagnosis, then 'follow-up examination after surgery for malignant neoplasm'. Together these accounted for about one quarter of daycase diagnoses. Cystoscopy was the recorded procedure for over 4000 of approximately 8000 daycases. Biopsy of prostate was the next commonest procedure: of 987 biopsies recorded, 703 were recorded at NBT (which provided just over half of the 8206 daycases). NBT was also unusual in recording 599 of 762 urethral catheterisations of bladder.

Trends in urology procedures

There have been substantial changes in sub-specialist categories of admissions between 1996/97 and 2003/04 (graph 2). Urodynamics and vasectomies have declined but surprisingly there has been no corresponding decline in total daycases (graphs 1 and 2).

Admissions for the sub-specialty of urology have grown. Within this sub-specialty daycase cystoscopies and prostate biopsies show a marked upward trend (graph 3). This growth is mainly attributable to growth at NBT, although recorded prostate biopsies rose substantially at UBHT between 2002/03 and 2003/04 (graphs 4 and 5).

Benchmarking day case access rates

A report on benchmarking of PCT day case access rates compared local rates with those of PCT peer group clusters², based on 2 yrs data (July 2001 to June 2003). Peer PCTs had similar demographic characteristics. Comparisons were based on number of spells per 1000 weighted GP population. The population was weighted for age and need factors.

Within urology, daycase rates for Bristol North, Bristol South and West and South Gloucestershire PCTs were 42%, 22% and 38% higher respectively than peer group averages. 6 of the 9 HRGs accounting for these high rates were associated almost

² PCT day case access rates. D Prothero, Avon IM&T. 2004.

exclusively with urodynamics at NBT. This activity should now be recorded as outpatient activity. The other 3 HRGs were:

- L20 minor endoscopic procedures, the main procedures within this being cystoscopy. Rates for all 3 PCTs were 2-3 times higher than peers.
- L30 minor prostate/bladder neck procedures, mainly with a procedure 'needle biopsy of prostate'. Rates for S Glos and Bristol North PCTs were about twice the peer average, whilst the rate for Bristol South and West was close to peer average. This may reflect different data coding at NBT compared to UBHT, or a genuinely higher procedure rate. As all trusts record some prostate biopsies as daycases, data coding practices seem less likely to explain the difference.
- L45 extracorporeal lithotripsy. Rates were again significantly higher for S Glos and Bristol North PCTs, but close to peer average for Bristol South and West.

Predicting the impact of demographic change alone on secondary care urology activity

Future demand will be influenced by changes in clinical practice and technology, as well as need related to the size and health of the population.

On the basis of predicted demographic changes alone, rates of growth for all ages for the Avon PCTs between 2002 and 2012 are estimated as:

Emergencies	6.6%
Elective Inpatients	9.4%
Day cases	8.5%

Within these totals, there is marked variation between PCTs with urology activity for South Gloucestershire predicted to grow by 17.8% (emergencies), 21.9% (electives) and 19.3% (daycases), whilst activity for Bristol is predicted to be at least 3% lower than at present for all three categories (table 3). These estimates assume that elective, emergency and daycase activity will all change at the same rate. Graph 1 and table 4 show how actual growth deviated from what would have been expected based on this assumption and demographic growth.

Conclusions

Differences in data recording between trusts, and within trusts over time, mean that findings in this report need to be treated with caution.

Numbers of emergency and elective admissions recorded by acute trusts have been remarkably stable between 1996/97 and 2002/03. First FCEs for urology emergencies at UBHT are under-reported as they are recorded under general surgery. A recent upturn in emergency admissions highlighted the need for PCTs to work with acute trusts to ensure that unnecessary admissions are prevented. Effective joint working between PCT community services and trust services can help to reduce admissions for urinary catheter care.

Outpatient activity is growing. Daycase cystoscopy and prostate biopsy are provided at a higher rate than expected, compared with PCTs with similar populations. Both procedures showed a marked upward trend. By contrast, demographic predictions

suggest modest growth over the next 10 years, but with marked variations at PCT level. South Gloucestershire is predicted to have the greatest growth.

Service commissioners need to understand why local provision is high (and growing) to help them plan ways of meeting future demand for urology services. Topics for further discussion include:

- Diagnosis and management of urological cancers: the impact of current and emerging clinical policy on demand.
- Avoidable emergency admissions for urinary catheterisation: sustaining progress made in providing community catheterisation services.
- Factors underlying growth in outpatient activity, and high level of recording of daycase urethral catheterisation at NBT.

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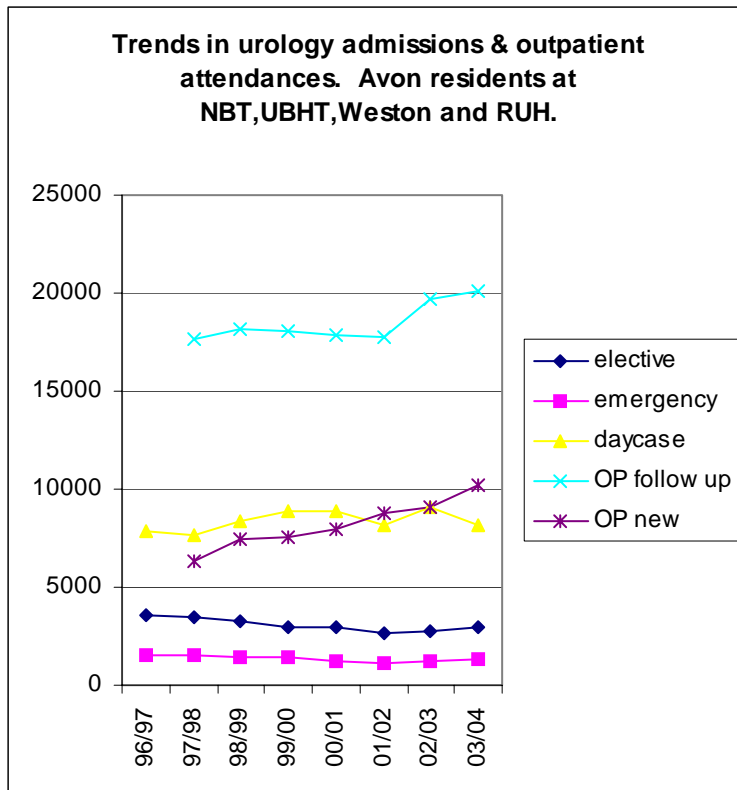
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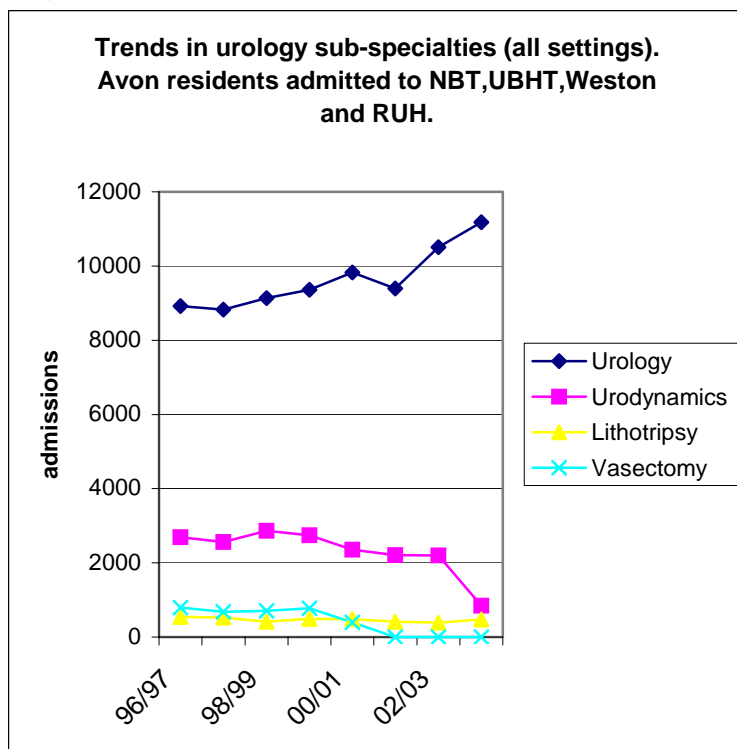
Data tables and graphs

Graph 1



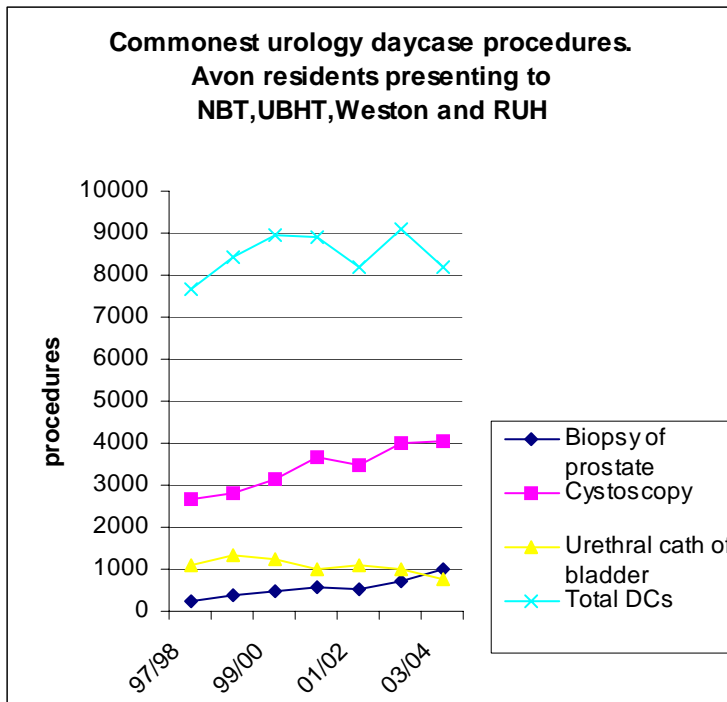
Source: Avon IM&T

Graph 2



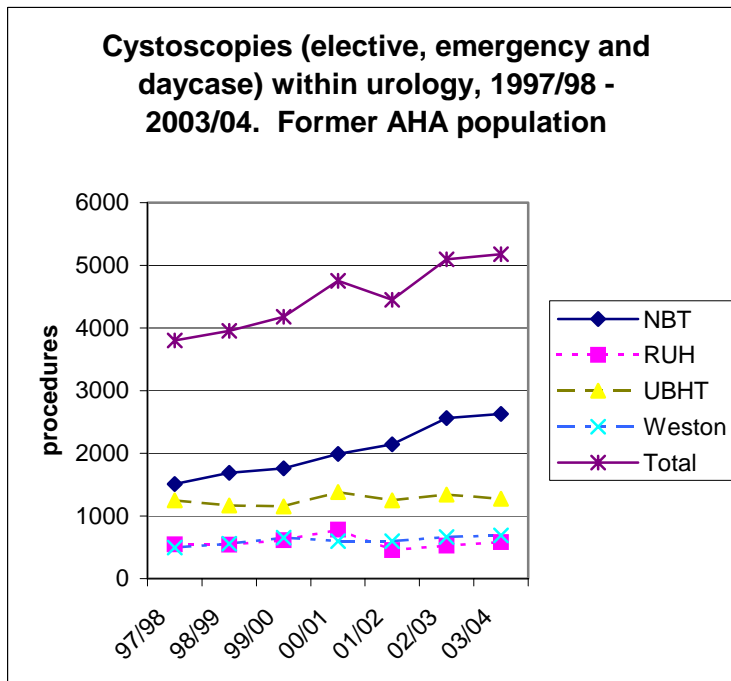
Source: Avon IM&T

Graph 3



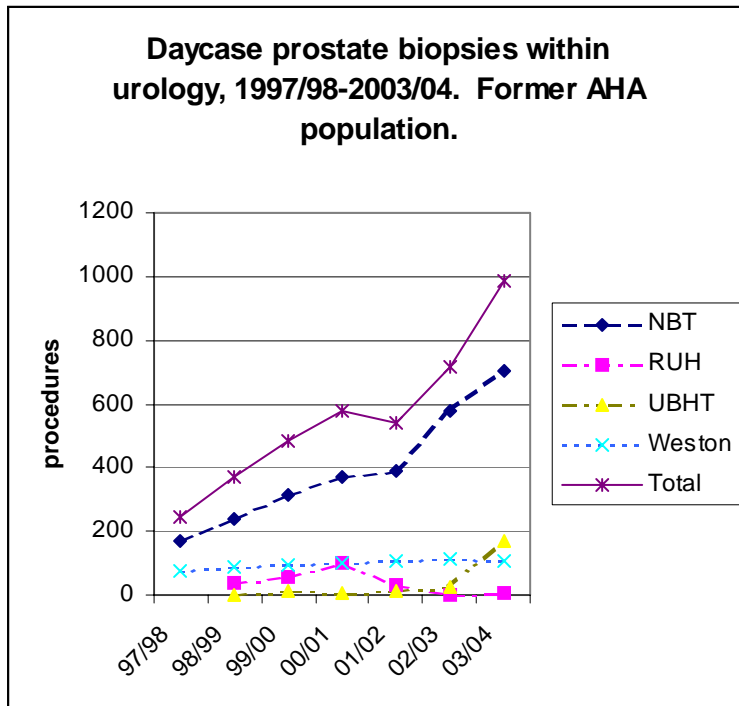
Source : Avon IM&T

Graph 4



Source Avon IM&T

Graph 5



Source :Avon IM&T

Table 1 Summary of activity in the specialty of urology, former AHA population 1996/97 – 2003/04

EI IP		NBT	NBT	NBT	NBT	RUH	RUH	RUH	RUH	UBHT	UBHT	UBHT	UBHT	Wes	Wes	Wes	Wes	Total	Total	Total	Total
		FCEs	Admiss	Beddays	LOS	FCEs	Admiss	Beddays	LOS	FCEs	Admiss	Beddays	LOS	FCEs	Admiss	Beddays	LOS	FCEs	Admiss	Beddays	LOS
EI IP	96/97	1847	1833	7279	3.9	509	503	1816	3.6	714	694	3326	4.7	502	495	1416	2.8	3572	3525	13837	3.9
	97/98	1801	1781	6857	3.8	520	515	1720	3.3	723	715	3763	5.2	445	441	1347	3.0	3489	3452	13687	3.9
	98/99	1676	1655	6486	3.9	438	438	1540	3.5	706	692	3229	4.6	522	515	1504	2.9	3342	3300	12759	3.8
	99/00	1542	1521	5630	3.7	463	460	1567	3.4	610	602	2735	4.5	404	399	959	2.4	3019	2982	10891	3.6
	00/01	1543	1526	5837	3.8	481	477	1785	3.7	604	600	2931	4.9	369	364	1066	2.9	2997	2967	11619	3.9
	01/02	1461	1437	5428	3.7	462	454	1873	4.1	445	425	2224	5.0	374	362	1027	2.7	2742	2678	10552	3.8
	02/03	1592	1573	6347	4.0	464	460	1490	3.2	471	462	2460	5.2	313	311	923	2.9	2840	2806	11220	4.0
	03/04	1515	1499	6176	4.1	476	469	1973	4.1	604	588	2575	4.3	423	418	1023	2.4	3018	2974	11747	3.9
Emg	96/97	899	824	4178	4.6	332	291	1171	3.5	510	385	2596	5.1	199	35	964	4.8	1940	1535	8909	4.6
	97/98	889	815	4473	5.0	312	274	1080	3.5	511	349	2130	4.2	255	63	1122	4.4	1967	1501	8805	4.5
	98/99	870	768	4560	5.2	287	262	1092	3.8	532	346	2679	5.0	218	43	795	3.6	1907	1419	9126	4.8
	99/00	960	843	4769	5.0	304	259	1226	4.0	467	308	2208	4.7	196	54	682	3.5	1927	1464	8885	4.6
	00/01	899	774	4365	4.9	264	224	1127	4.3	390	169	2512	6.4	212	54	829	3.9	1765	1221	8833	5.0
	01/02	888	725	3595	4.0	262	219	1169	4.5	349	89	1952	5.6	224	135	1198	5.3	1723	1168	7914	4.6
	02/03	1103	859	5378	4.9	280	236	1237	4.4	341	78	2090	6.1	211	15	886	4.2	1935	1188	9591	5.0
	03/04	1322	1040	5452	4.1	260	208	1063	4.1	359	55	1944	5.4	208	18	951	4.6	2149	1321	9410	4.4
DC	96/97	5657	5655			529	521			1152	1150			565	564			7903	7890		
	97/98	5273	5268			533	527			1296	1292			557	557			7659	7644		
	98/99	5781	5763			707	705			1304	1302			636	634			8428	8404		
	99/00	5861	5853			878	878			1442	1442			755	754			8936	8927		
	00/01	5385	5379			1057	1057			1694	1694			749	748			8885	8878		
	01/02	5114	5109			680	680			1572	1572			820	818			8186	8179		
	02/03	5767	5767			688	688			1754	1752			902	901			9111	9108		
	03/04	4691	4689			732	732			1913	1912			870	870			8206	8203		
To- tal	96/97	8403	8312	11457	1.4	1370	1315	2987	2.2	2376	2229	5922	2.5	1266	1094	2380	1.9	13415	12950	22746	1.7
	97/98	7963	7864	11330	1.4	1365	1316	2800	2.1	2530	2356	5893	2.3	1257	1061	2469	2.0	13115	12597	22492	1.7
	98/99	8327	8186	11046	1.3	1432	1405	2632	1.8	2542	2340	5908	2.3	1376	1192	2299	1.7	13677	13123	21885	1.6
	99/00	8363	8217	10399	1.2	1645	1597	2793	1.7	2519	2352	4943	2.0	1355	1207	1641	1.2	13882	13373	19776	1.4
	00/01	7827	7679	10202	1.3	1802	1758	2912	1.6	2688	2463	5443	2.0	1330	1166	1895	1.4	13647	13066	20452	1.5
	01/02	7463	7271	9023	1.2	1404	1353	3042	2.2	2366	2086	4176	1.8	1418	1315	2225	1.6	12651	12025	18466	1.5
	02/03	8462	8199	11725	1.4	1432	1384	2727	1.9	2566	2292	4550	1.8	1426	1227	1809	1.3	13886	13102	20811	1.5
	03/04	7528	7228	11628	1.5	1468	1409	3036	2.1	2876	2555	4519	1.6	1501	1306	1974	1.3	13373	12498	21157	1.6

1. Figures relate to Avon Health Authority

NB. residents only.

2. Average length of stay is average duration (in days) of FCEs.

Source : Admitted Patient Care Datasets supplied by trusts.

Table 2.1 Commonest diagnoses for urology emergency admissions, 2003/04

	NBT	RUH	UBHT	Weston	Total
Retention of urine	139	52	7	3	201
Complications following surg/med care	94	15	0	0	109
Unspecified haematuria	79	16	4	2	101
Unspecified renal colic	43	13	3	1	60
Orchitis and epididymitis	52	6	0	0	58
Urinary tract infection	44	8	0	0	52
Malignant neoplasm of prostate	36	11	2	2	51
Calculus of ureter	47	3	1	0	51
Calculus of kidney w/out calculus of ureter	37	11	1	0	49
Obstructive & reflux uropathy	36	5	2	2	45
Hyperplasia of prostate	34	7	3	0	44
Dorsalgia	42	0	0	0	42
Abdominal pain	29	5	1	0	35
Uncoded	45	0	0	0	45
Other diagnosis	283	56	31	8	378

Table 2.2 Commonest procedures for urology emergency admissions, 2003/04

	NBT	RUH	UBHT	Weston	Total
Urethral catheterisation of bladder	271	59	14	30	374
Cystoscopy	61	11	33	19	124
Blood transfusion	27	5	2	9	43
Prostatectomy (endoscopic)	19	7	14	1	41
Endoscopic insertion/removal of ureteric stent	17	7	6	3	33
Percutaneous nephrostomy	24	4	3		31
Operations on testis	15	3	0	1	19
Change/removal of suprapubic catheter	17	1	0	1	19
Lithotripsy (ureter)	12	0	0	0	12
Other operations on scrotum	9	0	0	2	11
Incision of kidney	1	3	2	0	6
All emergency FCEs	1322	260	359	208	2149

Table 2.3 Commonest diagnoses for urology elective inpatients, 2003/04

	NBT	RUH	UBHT	Weston	Total
Malignant neoplasm of bladder	358	66	127	94	645
Hyperplasia of prostate	141	74	94	61	370
Malignant neoplasm of prostate	166	32	53	29	280
Fitting and adjustment of urinary device	117	21	6	15	159
Urethral stricture	44	16	32	26	118
Other disorders of bladder	55	10	26	10	101
Retention of urine	62	14	5	5	86
Unspecified haematuria	25	7	6	40	78
Follow-up examination after surgery for mal. Neoplasm	45	8	5	17	75
Calculus of kidney w/out calculus of ureter	45	8	7	0	60
Calculus of ureter	23	16	2	9	50
Uncoded	28	1		3	32
Other diagnosis	390	196	225	109	920

Table 2.4 Commonest procedures for urology elective inpatients, 2003/04

	NBT	RUH	UBHT	Weston	Total
Cystoscopy	495	159	162	178	994
Prostatectomy (endoscopic)	168	120	117	74	479
Urethral cath of bladder	193	21	4	13	231
Prostatectomy (radical)	66	9	17	8	100
Urethroscopy	33	13	27	15	88
Nephrectomy	38	10	22	8	78
Endosc insertion/removal of ureteric stent	21	8	11	7	47
Circumcision	18	7	11	3	39
Cystostomy	21	2	6	4	33
Endosc incision male bladder neck	12	7	8	6	33
Orchidectomy	10	10	6	5	31
% uncoded	1.9	0.2	0.9	0.7	
All FCEs	1515	476	604	423	3018

Table 2.5 Commonest diagnoses for urology daycases, 2003/04

Diagnosis	NBT	RUH	UBHT	Weston	Total
Unspecified haematuria	791	4	319	201	1315
Follow-up examination after surgery for mal. Neoplasm	598	41	167	143	949
Malignant neoplasm of bladder	355	11	173	76	615
Other disorders of bladder	306	7	116	27	456
Hyperplasia of prostate	171	5	206	71	453
Malignant neoplasm of prostate	281	3	44	42	370
Stress incontinence	312	1	12	0	325
Fitting and adjustment of urinary device	80	5	139	94	318
Calculus of kidney w/out calculus of ureter	231	11	5	0	247
Uncoded	191	1		7	199
Polyuria	76	1	28	4	109
Contraceptive management	11	84	2	5	102
Other signs and symptoms involving urinary system	74	1	10	15	100
Other specified special examinations	23	0	0	3	26
Other diagnosis	1189	557	691	182	2619
% uncoded	4.073363	0.14	0.1	0.8	
	4689	732	1912	870	8203

Table 2.6 Commonest procedures for urology daycases, 2003/04

	NBT	RUH	UBHT	Weston	Total
Cystoscopy	2072	413	1078	493	4056
Biopsy of prostate	703	4	171	109	987
Urethral catheterisation of bladder	599	2	79	82	762
Circumcision	89	37	59	30	215
Lithotripsy (kidney)	201	8	0	0	209
Lithotripsy (ureter)	117	23	0	0	140
Vasectomy	10	85	3	4	102
Urethroscopy	30	21	31	6	88
Operations on hydrocele	15	9	14	10	48
% uncoded	4.1	0.1	0	0.8	
All FCEs	4691	732	1913	870	8206

Table 3 Estimated changes in secondary care urology activity based on demographic change alone, 2002 – 2012

		2002	2012	%change (All Ages)
South Gloucestershire PCT	Non-elective	504	594	17.8%
	Elective IP	787	959	21.9%
	Day Cases	2525	3012	19.3%
Bath and North East Somerset PCT	Non-elective	299	317	6.1%
	Elective IP	495	530	7.2%
	Day Cases	885	942	6.5%
Bristol PCTs	Non-elective	780	751	-3.7%
	Elective IP	984	937	-4.7%
	Day Cases	3674	3556	-3.2%
North Somerset PCT	Non-elective	379	430	13.4%
	Elective IP	623	733	17.6%
	Day Cases	2169	2526	16.5%
Avon PCTs	Non-elective	1962	2091	6.6%
	Elective IP	2889	3160	9.4%
	Day Cases	9253	10037	8.5%

Source: Avon IM&T

Table 4 Comparison of observed and projected urology activity, 1997/98 vs 2002/03

		Actual activity in 1997/8*	Projected activity for 2002/3	Actual activity in 2002/3	2002/3 Actual minus projected
South Gloucestershire PCT	Non-elective	399	430	498	68
	Elective IP	735	805	767	-38
	Day Cases	2135	2275	2487	212
Bath and North East Somerset PCT	Non-elective	332	336	290	-46
	Elective IP	635	634	486	-148
	Day Cases	805	809	860	51
Bristol PCTs	Non-elective	801	806	772	-34
	Elective IP	1306	1297	976	-321
	Day Cases	3144	3168	3636	468
North Somerset PCT	Non-elective	435	438	375	-63
	Elective IP	813	819	610	-209
	Day Cases	1575	1589	2129	540
Avon PCTs	Non-elective	1967	2010	1935	-75
	Elective IP	3489	3555	2840	-715
	Day Cases	7659	7841	9111	1270

Source: Avon IM&T

*includes a small number of Avon cases assigned to PCT proportionately